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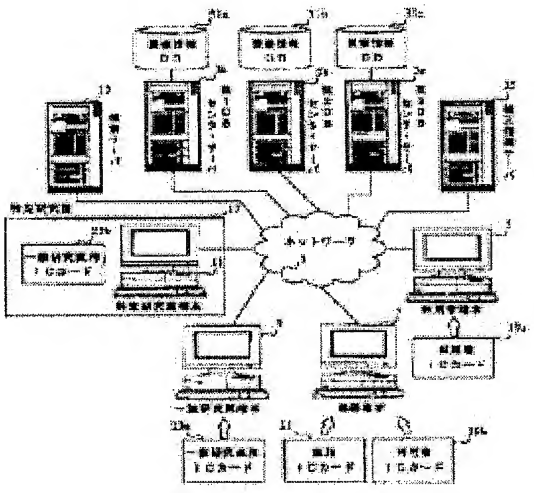
(54) INFORMATION STORAGE CARD, MEDICAL INFORMATION PROCESSING SYSTEM, COMPUTER SYSTEM IN DATABASE CENTER, MEDICAL INFORMATION PROCESSING METHOD AND MEDICAL INFORMATION STORAGE PROCESSING METHOD

(57)Abstract:
PROBLEM TO BE SOLVED: To effectively utilize medical information in the case there are a plurality of DB centers for storing the medical information.
SOLUTION: The URLs of the DB center servers 3 for storing the medical information of a user and information, etc., which corresponds to the respective URLs and are related at least to the utilization periods of the DB center servers 3, stored in an IC card 19 held by the user are read from the IC card 19. Next, the input of a retrieval condition of the medical information is received. The URL of a DB center server 3 to which the retrieval condition should be transmitted is extracted by utilizing at least the information, etc., about the utilization periods of the DB center servers 3. The retrieval condition is transmitted according to the extracted URL of the DB center server 3. Medical information being retrieval results is received from the DB center server 3 and displayed on the display device of a terminal. When access policy in the DB center server 3 is appropriately determined, medical information prepared by a research doctor can also be utilized.



CLAIMS

[Claim(s)]

[Claim 1]Access destination information for said user's information acquisition in 1 or two or more database center servers which save a user's personal information and specific information, An information storage card which has a storage area which stores information about a period when information of the user concerned was stored in a database center server concerning the access point concerned corresponding to each aforementioned access destination information.

[Claim 2]The information storage card according to claim 1 storing further information of a medical institution relevant to said user's information stored in a database center server concerning the access point concerned corresponding to each aforementioned access destination information.

[Claim 3]The information storage card according to claim 1 storing further access destination information in a database center server for newly storing said user's information.

[Claim 4]The information storage card according to claim 1 storing further information about a data storage period in a database center server for newly storing said user's information.

[Claim 5]The information storage card according to claim 4 storing further information about a data compression rate within an account data storage period of legal preservation out of date back to front in a database center server for newly storing said user's information.

[Claim 6]A medical information processing system comprising:

A means to acquire a user's medical information which should be transmitted to a database center server which accumulates medical information.

A means to acquire information about a retention period of said medical information which should be transmitted stored in an information storage card which said user holds, and writing destination information in said database center server, A transmitting means which transmits information about said medical information which should be transmitted, and said retention period according to writing destination information in said database center server.

[Claim 7]It has further a means to acquire information about a data compression rate within an account data storage period of legal preservation out of date back to front of said medical information which was stored in an information storage card which said user holds and which should be transmitted, The medical information processing system according to claim 6, wherein said transmitting means transmits information about information about said medical information which should be transmitted, and said retention period, and said data compression rate according to writing destination information on said database center server.

[Claim 8]A means to judge whether information stored in said information storage card needs to be updated by transmission to said database center server of said medical information, The medical information processing system according to claim 6 which has further a means which writes update information in said information storage card when information stored in said information storage card needs to be updated.

[Claim 9]The medical information processing system according to claim 6 which has further a means to compress with compression technology in which resolution hierarchization is possible, to said medical information.

[Claim 10]The medical information processing system according to claim 6 which has further a means to judge whether a representative's attestation specified in said user's information storage card succeeded in an emergency, and a means to permit use of said user's information when said representative's attestation is successful.

[Claim 11]A medical information processing system comprising:

An acquisition means which corresponds to reference destination information and each reference destination information on 1 or two or more database center servers which were stored in an information storage card which a user holds that medical information of the user concerned is stored, and acquires information about an available term of the database center server concerned at least.

A means to acquire a search condition of medical information.

A reference destination information extraction means which extracts reference destination information on said database center server relevant to said search condition at least using information about an available term of said database center server.

A means to transmit said at least a part of search condition according to reference destination information on said extracted database center server.

[Claim 12]Said acquisition means acquires information of a medical institution relevant to data of the user concerned which corresponded to each reference destination information stored in said information storage card, and was stored in the database center server concerned, Said reference destination information extraction means uses information of a medical institution relevant to data of the user concerned stored in information about an available term of said database center server, and said database center server, The medical information processing system according to claim 11 extracting reference destination information on said database center server relevant to said search condition.

[Claim 13]The medical information processing system according to claim 11 which has further a means which it orders with displaying the medical information concerned on a display device in arbitrary resolution in receiving medical information compressed from said database center server with compression technology in which resolution hierarchization is possible.

[Claim 14]The medical information processing system according to claim 11 which has further a means to receive said user's medical information from said extracted database center server, and a means to transmit a correction information demand of coded data included in said received medical information to a correction information server.

[Claim 15]The medical information processing system according to claim 11 which has further a means to receive said user's medical information, and information about a fee of the medical information concerned from said extracted database center server, and a means to display said user's medical information, and information about a fee of the medical information concerned.

[Claim 16]A receiving process means which receives a user's medical information and information about a retention period of the medical information concerned, and is stored in a field of the user concerned in medical information memory storage, A means to judge whether specific medical information passed a legal preservation term of the specific medical information concerned by searching said memory storage, A means to judge whether a retention period set as the specific medical information concerned passed when said specific medical information had passed a legal preservation term of the specific medical information concerned, Computer systems in a database center which has a means to delete the specific medical information concerned when said specific medical information has passed a retention period set as the specific medical information concerned.

[Claim 17]Said receiving process means receives a data compression rate within a retention period of a user's medical information and the medical information concerned, and an account retention period of legal preservation out of date back to front, Although it stored in a field of the user concerned in memory storage and said specific medical information has passed a legal preservation term, when a retention period set as the specific medical information concerned has not passed, Computer systems in the database center according to claim 16 which has further a compression processing means to carry out processing which decreases data volume of said specific medical information according to a data compression rate of the specific medical information concerned.

[Claim 18]Computer systems in the database center according to claim 17, wherein said compression processing means cancels piece data of said medical information so that it may agree in said data compression rate when said medical information is compressed with compression technology in which resolution hierarchization is possible.

[Claim 19]Information for said user's medical information to identify an individual about each user, It contains with general medical information of the user concerned, and secret medical information as which security protection of the user concerned is required, According to retrieval required from a laboratory doctor, search of said general medical information which excepted information for identifying an individual is permitted, A means to permit search of said general medical information which excepted information for identifying an individual according to retrieval required by laboratory doctor by whom delegation was done beforehand, or a laboratory doctor from specific access origin, and said secret medical information, Computer systems in the database center according to claim 16 which it has in a pan.

[Claim 20]Computer systems in the database center according to claim 16 which has further a means to permit access to the medical practitioner concerned when there is access from a medical practitioner who specified a specific user and created medical information of the specific user concerned at least.

[Claim 21]Computer systems in the database center according to claim 16 which has further a means to permit the medical practitioner concerned access when there is access to medical information of the specific user concerned from a medical practitioner by whom a delegation of power was beforehand registered to a specific user.

[Claim 22]A step which acquires a user's medical information which should be transmitted to a database center server which accumulates medical information, A step which acquires information about a retention period of said medical information which should be transmitted stored in an information storage card which said user holds, and writing destination information in said database center server, A medical-information-processing method containing a transmission step which transmits information about said medical information which should be transmitted, and said retention period according to writing destination information in said database center server.

[Claim 23]A step which acquires information about a data compression rate within an account data storage period of legal preservation out of date back to front of said medical information which was stored in an information storage card which said user holds, and which should be transmitted is included further, The medical information processing system according to claim 22, wherein said transmission step is a step which transmits information about information about said medical information which should be transmitted, and said retention period, and said data compression rate according to writing destination information on said database center server.

[Claim 24]An acquisition step which corresponds to reference destination information and each reference destination information on 1 or two or more database center servers which were stored in an information storage card which a user holds that medical information of the user concerned is stored, and acquires information about an available term of the database center server concerned at least, With a step which acquires a search condition of medical information, information about an available term of said database center server is used at least, A medical-information-processing method of having a reference destination information extraction step which extracts reference destination information on said database center server relevant to said search condition, and a step which transmits said at least a part of search condition according to reference destination information on said extracted database center server.

[Claim 25]Said acquisition step is a step which acquires information of a medical institution relevant to data of the user concerned which corresponded to each reference destination information stored in said information storage card, and was stored in the database center server concerned, Said reference destination information extraction step uses information of a medical institution relevant to data of the user concerned stored in information about an available term of said database center server, and said database center server, A medical-information-processing method according to claim 24 being a step which extracts reference destination information on said database center server relevant to said search condition.

[Claim 26]A medical-information-processing method according to claim 24 which contains further a step which it orders with displaying the medical information concerned on a display device in arbitrary resolution in receiving medical information compressed from said database center server with compression technology in which resolution hierarchization is possible.

[Claim 27]A reception step which receives a user's medical information and information about a retention period of the medical information concerned, and is stored in a field of the user concerned in medical information memory storage, A step which judges whether specific medical information passed a legal preservation term of the specific medical information concerned by

searching said memory storage, A step which judges whether a retention period set as the specific medical information concerned passed when said specific medical information had passed a legal preservation term of the specific medical information concerned, A medical information storage disposal method which contains a step which deletes the specific medical information concerned when said specific medical information has passed a retention period set as the specific medical information concerned.

[Claim 28]Said reception step receives a data compression rate within a retention period of a user's medical information and the medical information concerned, and an account retention period of legal preservation out of date back to front, Although it is a step stored in a field of the user concerned in memory storage and said specific medical information has passed a legal preservation term, when a retention period set as the specific medical information concerned has not passed, The medical information storage disposal method according to claim 27 which contains further a compression processing step which carries out processing which decreases data volume of said specific medical information according to a data compression rate of the specific medical information concerned.

[Claim 29]Are a program for performing medical information processing the stored recording medium, and said program, A step which acquires a user's medical information which should be transmitted to a database center server which accumulates medical information in a computer, A step which acquires information about a retention period of said medical information which should be transmitted stored in an information storage card which said user holds, and writing destination information in said database center server, A recording medium which is a program for performing a transmission step which transmits information about said medical information which should be transmitted, and said retention period according to writing destination information in said database center server.

[Claim 30]Are a program for performing medical information processing the stored recording medium, and said program, . Were stored in an information storage card which a user holds to a computer. An acquisition step which corresponds to reference destination information and each reference destination information on 1 or two or more database center servers that medical information of the user concerned is stored, and acquires information about an available term of the database center server concerned at least, With a step which acquires a search condition of medical information, information about an available term of said database center server is used at least, A reference destination information extraction step which extracts reference destination information on said database center server relevant to said search condition, A recording medium which is a program for performing a step which transmits said at least a part of search condition according to reference destination information on said extracted database center server.

[Claim 31]It is the recording medium which stored a program for medical information storage processing, A reception step which said program receives a user's medical information and information about a retention period of the medical information concerned to a computer, and stores in it to a field of the user concerned in medical information memory storage, A step which judges whether specific medical information passed a legal preservation term of the specific

medical information concerned by searching said memory storage, A step which judges whether a retention period set as the specific medical information concerned passed when said specific medical information had passed a legal preservation term of the specific medical information concerned, A recording medium which is a program for performing a step which deletes the specific medical information concerned when said specific medical information has passed a retention period set as the specific medical information concerned.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the management engineering of medical information using the database center which is connected to the information storage card and network which an individual holds, and accumulates medical information in more detail about the management engineering of medical information.

[0002]

[Description of the Prior Art]For example, JP,H10-312430,A has disclosed the medical information processing system containing the network computer (NC) which can write an IC card, the server which supplies a program and data to NC, and the database with which it is accessible from said server, and user interface information, individual medical information, etc. are accumulated. From an IC card, NC of this medical information system is read, and accesses the address information of the server which should be connected, and the ID information read from the IC card is transmitted. When ID information is just, a server reads user interface information from a database, transmits it to NC, and it enables access to the medical information of the NC concerned. However, it is not taken into consideration that, as for the server which NC should access, only one exists, but two or more servers exist. About management of the medical information accumulated in a database, it is not specially taken into consideration. The field of epidemiological research use of the medical information accumulated in a database is not taken into consideration at all.

[0003]

[Problem to be solved by the invention]Thus, although medical information is accumulated in the database connected to the network and making medical information available at various places including two or more medical institutions is examined from the former, it is not realistic to form a database in the one whole country and to manage it intensively. Although it is possible to form a database for every health insurance society and every area, and to match a one citizen with one database, it may change its employment or move and a one citizen must have been actually matched with one database covering the whole life. Becoming huge is not predicted and what is necessary is just not to necessarily only accumulate the data volume of medical information, and flexible preservation management according to each user's hope should be performed, following a legal preservation term. It is preferred to only make accumulation of such medical information available, not only the medical service to an individual but social use, i.e., epidemiological research.

However, even if it is research use, use of unrestricted medical information is not necessarily allowed. When two or more database centers where the purpose of this invention accumulates medical information based on the above viewpoints exist, it is providing the information processing technique for using medical information effectively. Other purposes of this invention are to provide the information processing technique for managing medical information efficiently in a database center. Other purposes of this invention are cooperation with an information storage card, and are providing the information processing technique for aiming at use for proper medical information.

[0004]

[Means for solving problem]The information storage card (for example, IC card) which a user holds in this invention, The terminal unit (a doctor terminal, a user terminal, and a researcher terminal) which is written to an information storage card with two or more database center servers which accumulate medical information, and is exchanged with a database center server is used. The information storage card concerning the 1st mode of this invention, The access destination information for a user's information acquisition in 1 or two or more database center servers which save a user's personal information and specific information, Corresponding to each access destination information, it has a storage area which stores the information about the period when the information of the user concerned was stored in the database center server concerning the access point concerned. Thus, since the information about the period when the information of the user concerned was stored in the database center server which starts the access point concerned not only corresponding to the access destination information for a user's information acquisition but corresponding to each access destination information is stored, When two or more database center servers exist, it comes to be able to perform search of medical information efficiently. Corresponding to each access destination information, it may be the composition that the information of the medical institution relevant to a user's information stored in the database center server concerning the access point concerned is replaced with and stored in the information about a period in addition to the information about the period described in the top. Thereby, search of efficient medical information is attained. It may be the composition that the access destination information in the database center server for newly storing a user's information in the information storage card concerning the 1st mode of this invention is stored further. The storage location of the present medical information can be easily acquired now. It may be the composition that the information about the data storage period in the database center server for newly storing a user's information in the information storage card concerning the 1st mode of this invention is stored further. It can use now for management of the medical information kept by the database center server. It may be the composition that similarly the information about the data compression rate within an after [legal preservation out of date] data storage period in the database center server for newly storing a user's information is stored further. It can use for efficient management of the medical information similarly kept by the database center server.

[0005]The medical information processing system (for example, there is also a case of a terminal

unit and a retrieval server) concerning the 2nd mode of this invention is provided with the following.

A means to acquire from a user's medical information which should be transmitted to the database center server which accumulates medical information (for example, medical equipment, a clinical recording system, etc.).

A means to acquire the information about the retention period of the medical information which should be transmitted and the writing destination information in a database center server which were stored in the information storage card which a user holds.

The transmitting means which transmits the information about the medical information and the retention period which should transmit according to the writing destination information in a database center server.

Thereby, since medical information can be kept now with a retention period, a database center server becomes manageable [, such as flexible preservation/cancellation,] for every medical information.

[0006]. Were stored in the information storage card which a user holds in the 2nd mode of this invention. It has further a means to acquire the information about the data compression rate within the after [legal preservation out of date] data storage period of the medical information which should be transmitted, It is also possible to have composition which transmits the information about the information about the medical information and the retention period which should transmit the transmitting means expressed in the top, and a data compression rate according to the writing destination information on a database center server. Even when managing medical information by a database center server after legal preservation out of date, the data volume kept according to a data compression rate can be decreased. A data compression rate can also respond flexibly for every user. In the 2nd mode of this invention, by transmission to the database center server of medical information. Composition which has further a means to judge whether the information stored in the information storage card needs to be updated, and a means which writes update information in an information storage card when the information stored in the information storage card needs to be updated is also possible. For example, it comes to be able to perform search efficient at the time of medical information reference by updating information, including the database center server available term corresponding to the writing destination information on a database center server, medical institution information, an information kind, etc. It may be the composition that it has further a means to compress with the compression technology in which resolution hierarchization is possible, to medical information. For example, JPEG2000 (Joint Photographic Experts Group 2000) is used. Thereby, compression (compression with a loss) of the medical information in a database center server can be managed with cancellation of information, and a merit, like it can display in predetermined resolution only by the information part which display processing in a terminal unit received arises. In an emergency, it may be the composition that it has further a means to judge whether the representative's attestation specified in a user's information storage card was successful, and a means to permit use of a user's information when a representative's

attestation is successful. Also when the necessity of accessing a medical practice top database center server even when the person himself/herself cannot enter a password arises, it is for being certain. Specific persons, such as a medical practitioner, may be able to read the information for emergency care, including for example, a blood group, the latest prescribed drug, etc., stored in the information storage card.

[0007]The medical information processing system (for example, there is also a case of a terminal unit and a retrieval server) concerning the 3rd mode of this invention is provided with the following.

The acquisition means which corresponds to the reference destination information and each reference destination information on 1 or two or more database center servers which were stored in the information storage card which a user holds that the medical information of the user concerned is stored, and acquires the information about the available term of the database center server concerned at least.

A means to acquire the search condition of medical information.

The reference destination information extraction means which extracts the reference destination information on the database center server relevant to a search condition at least using the information about the available term of a database center server.

A means to transmit at least a part of search condition according to the reference destination information on the extracted database center server.

Thus, when two or more database centers exist, it is efficient to output retrieval required to all, if the database center which establishes a reference destination information extraction means and actually transmits retrieval required is undesirably extracted as stated in the top. It is made for search conditions to differ to each database center depending on the inputted search condition. It constitutes so that the information of the medical institution relevant to the data of the user concerned which corresponded to each reference destination information stored in the information storage card, and was stored in the database center server concerned in the acquisition means expressed in the top may be acquired, The information of the medical institution relevant to the data of the user concerned stored in the information and database center server about the available term of a database center server in the reference destination information extraction means expressed in the top is used, It is also possible to have composition which extracts the reference destination information on the database center server relevant to a search condition. It can search now more efficiently. In the 3rd mode of this invention, when receiving the medical information compressed from the database center server with the compression technology in which resolution hierarchization is possible, composition which has further a means ordered with displaying the medical information concerned on a display device in arbitrary resolution is also possible. For example, if it is JPEG2000, according to the resolution of the viewing area of medical information, it can display by a part of medical information received from the database center server.

[0008]In the 3rd mode of this invention, composition which has further a means to receive a user's medical information from the extracted database center server, and a means to transmit

the correction information demand about the coded data included in the received medical information to a correction information server is also possible. Among medical information, a threshold value besides an absolute value is set up and coded data may judge normal, abnormalities, etc. by contrast with the threshold value, and if a threshold value is changed, it may change a meaning. Therefore, it enables it to use the newest threshold value etc. that have trust by the medical world at the time of medical information reference. A means to receive a user's medical information and the information about the fee of the medical information concerned from the extracted database center server in the 3rd mode of this invention, Composition which has further a means to display a user's medical information and the information about the fee of the medical information concerned is also possible.

[0009]The computer systems in a database center concerning the 4th mode of this invention are provided with the following.

The receiving process means which receives a user's medical information and the information about the retention period of the medical information concerned, and is stored in the field of the user concerned in medical information memory storage.

A means to judge whether specific medical information passed the legal preservation term of the specific medical information concerned by searching memory storage.

A means to judge whether the retention period set as the specific medical information concerned passed when specific medical information had passed the legal preservation term of the specific medical information concerned.

A means to delete the specific medical information concerned when specific medical information has passed the retention period set as the specific medical information concerned.

Thus, since the retention period by a user etc. is beforehand set up corresponding to medical information, it comes to be able to perform flexible data management in alignment with not only a legal preservation term but the user's hope. The data compression rate within the retention period of a user's medical information and the medical information concerned and an after [legal preservation out of date] retention period is received for the receiving process means expressed in the top, Although it stored in the field of the user concerned in memory storage and specific medical information has passed the legal preservation term, when the retention period set as the specific medical information concerned has not passed, It may be the composition that it has further a compression processing means to carry out processing which decreases the data volume of specific medical information according to the data compression rate of the specific medical information concerned. The preservation mode of the medical information in a database center can be arbitrarily set up now by a data compression rate.

[0010]When medical information is compressed in a compression processing means described in a top with compression technology in which resolution hierarchization is possible, it is also possible to have composition which cancels piece data of medical information so that it may agree in a data compression rate. For example, it is a case where JPEG2000 is being used. In [a user's medical information contains about each user with information for identifying an individual, general medical information of the user concerned, and secret medical information as which security

protection of the user concerned is required, and] the 4th mode of this invention, According to retrieval required from a laboratory doctor, search of general medical information which excepted information for identifying an individual is permitted, According to retrieval required by laboratory doctor by whom delegation was done beforehand, or a laboratory doctor from specific access origin, it may be the composition that it has further a means to permit search of general medical information which excepted information for identifying an individual, and secret medical information. After this secures anonymity, effective use of medical information is attained. When there is access from a medical practitioner who specified a specific user and created medical information of the specific user concerned at least, it may be the composition that it has further a means to permit access to the medical practitioner concerned. Thereby, the family doctor can access medical information which he created. When there is access to medical information of the specific user concerned from a medical practitioner by whom a delegation of power was beforehand registered to a specific user, it is also possible to have composition which has further a means to permit the medical practitioner concerned access. A delegation of power can refer further much medical information now. The contents of processing concerning the 2nd thru/or the 4th mode of this invention described in a top may be expressed as an information processing method. A system concerning the 2nd thru/or the 4th mode of this invention may be realized in combination of the usual computer and a program. In such a case, a program is stored in a storage or memory storage, such as a floppy (registered trademark) disk, CD-ROM, a magneto-optical disc, semiconductor memory, and a hard disk, for example. An interim processing result is stored temporarily by memory.

[0011]

[Mode for carrying out the invention]The outline of the medical information processing system concerning this invention is explained using drawing 1. The 1st DB center server 3a which manages medical information database (DB)31a which stores medical information in the network 1, The 2nd DB center server 3b which manages medical information DB31b, and the 3rd DB center server 3c which manages medical information DB31c, For example, the user terminal 5 which the user who is a patient operates it and has a reader writer of user IC card 19a, The doctor terminal 7 which a medical practitioner operates it and has a reader writer of user IC card 19b which are medical practitioner IC card 21 and a patient, The terminal device for laboratory doctors 9 which a laboratory doctor operates it and has a reader writer of IC card for laboratory doctors 23a, The specific laboratory doctor terminal 11 which is provided in the specific laboratory 17 which is studying specific medical fields, such as cancer, and where an entered person's management is made, and has a reader writer of IC card for laboratory doctors 23b or the IC card for specific laboratory doctors (not shown) is connected. The retrieval server 13 which collects instead of user-terminal 5 grade at the network 1 to the DB center server 3 depending on the case, and performs a search, The correction information server 15 which holds the newest reliable decision threshold information etc. when the medical information referred to is coded data, for example, transmits the decision threshold information concerned etc. according to the demand from the user terminal 5 may be connected.

[0012]Although the state where the 1st thru/or the three 3rd exist [the DB center server 3] is shown by drawing 1, a number is not limited to 3. The number of the user terminal 5, the doctor terminal 7, the laboratory doctor 9, and the specific laboratory doctor terminals 11 is not limited to 1, either, and many terminals may be connected to the network 1. Also about the retrieval server 13 and the correction information server 15, it is not one and more than one may be provided. User IC card 19 is distributed to each user. Medical practitioner IC card 21 is distributed to each medical practitioner. IC card for laboratory doctors 23 is distributed to a medical practitioner who is inquiring. It may be made to distribute an IC card for specific laboratory doctors to a laboratory doctor who is studying a specific medical field. In order to enter the specific laboratory 17, an IC card for the Immigration Bureaus, etc. may be used separately. IC card reader writers which insert an IC card for the Immigration Bureaus concerned, etc. may be provided in the specific laboratory doctor terminal 11. As long as the IC card can secure a storage capacity and security protection, they may be other information storage cards. The network 1 may be the Internet, for example and may be a network of a form which a server and a terminal connect with a public network or a leased line network.

[0013]Functional constitution of the terminal units 100, such as the user terminal 5, the doctor terminal 7, the terminal device for laboratory doctors 9, and the specific laboratory doctor terminal 11, is shown in drawing 2. The terminal unit 100 is provided with the following.

IC card reader writers 102.

The display device 120 which are CRT (Cathode Ray Tube) and a liquid crystal display.

A mouse, a keyboard or the display device 120, and the input device 121 that is the touch panels provided by one.

For example, the medical information acquisition part 104 which receives medical information from test equipment etc., or acquires clinical recording information from an electronic chart system etc., JPEG2000 compression and the decompression part 106 which compresses and thaws picture information etc. which are contained in medical information in JPEG2000 form, From an IC card, for example, the authentication processing part 108 which carries out authenticating processing by comparing with a password which read information on a pass word and was entered from the input devices 121, such as a keyboard, The search pretreatment part 110 which pretreats whether retrieval required should actually be transmitted to which DB center server based on a search condition inputted by user, and search, such as determining, The display processing part 112 which performs display processing to the display device 120, and the IC card setting processing part 114 for changing setup information of an IC card, when new medical information is transmitted to the DB center server 3, The communications department 118 which communicates via the retrieval server 13, the correction information server 15, and the network 1 depending on the DB center server 3 or the case, and the correction processing section 116 which processes coded data included in medical information based on correction information received from the correction information server 15.

The emergency treating part 122 for using for the doctor terminal 7 medical information for emergency reference beforehand stored in an IC card in order to make an IC card of the person

himself/herself available by a designated representative's attestation in an emergency, A patient's data writing point DB center URL (Uniform Resource Locator) and reference destination URL (health information URL) which he created are recorded, or the patient treating part 124 which carries out delegation-of-power processing is formed.

[0014]The information stored in user IC card 19 is explained. As shown in drawing 3, to user IC card 19. The personal information 190 as for which an user-codes, name, address, and man-and-woman exception includes organization information, including a date of birth, an affiliation health insurance society, etc., the information for attestation containing a password, etc., The cryptographic key 192 containing the cryptographic key for communication, and the cryptographic key for preservation, and data writing point DB center URL194 which are the present preservation destinations of medical information, The retention period information 196 which is information about the retention period of the medical information stored in DB center, The compression ratio information 198 which is information on the data compression rate within the retention period set as the after [a legal preservation term] medical information over picture information etc. among the medical information stored in DB center, The representative information, including the user codes etc. of the representative who enables it to use user IC card 19 for an emergency instead of the person himself/herself, 200, Health information URL204 in the DB center server 3 which is a preservation destination of the medical information 202 for emergency reference, such as an inspection result of a blood group required in order that a medical practitioner etc. may take a measure with reference to an emergency etc., and the newest prescribed drug, and the medical information saved in the past is stored. The available term information 206 concerning the available term of the DB center concerned corresponding to health information URL204, The medical institution code 207 which is the identification information (or information on medical checkup / medical-examination place) of the medical institution relevant to the medical information stored in the DB center concerned, Medical checkup / medical-examination classification 208, such as a schoolboy medical checkup, a general place-of-business medical checkup, a special medical checkup, Medical Science Division, etc. relevant to the medical information stored in the DB center concerned, The reference compensation information 209 which is an insurance mark system (payment modes, such as a progress payment or result payment, etc. are included) at the time of acquiring the medical information stored from the DB center concerned is stored. Health information URL204 and the pertinent information 206 thru/or 209 may be plurality, if there is also a case according to a user's Assessment on Search Report by Designated Searching Authority. As shown in drawing 4, the medical practitioner identification information 210 including the information for attestation containing a medical practitioner code, a name, a medical institution code, and a password is stored in medical practitioner IC card 21. Patient URL list 212 containing data writing point DB center URL194 and health information URL204 of the patient who received the patient and delegation of power which it took charge of, for example may be stored. It may be the composition which is stored in the doctor terminal 7 about this patient URL list 212. As shown in drawing 5, the laboratory doctor identification information 252 including the information for attestation

containing a laboratory doctor code, a name, a research institution code, and a password is stored in IC card 25 (IC card for laboratory doctors 23 or the IC card for specific laboratory doctors) for laboratory doctors. In the case of the IC card for specific laboratory doctors, the specific laboratory doctor identification information 254 including the certification information containing a laboratory doctor code, a name, a research institution code, and a password is stored. About medical practitioner IC card 21 and IC card 25 for laboratory doctors, the information stored in user IC card 19 may also be doubled and stored, and a medical practitioner and a laboratory doctor may be the composition that a two-sheet IC card is held.

[0015]Composition of the DB center server 3 is explained using drawing 6. The communications department 300 for communicating with the retrieval server 13 via the network 1 in the DB center server 3 depending on the user terminal 5, the doctor terminal 7, the terminal device for laboratory doctors 9 and the specific laboratory doctor terminal 11, and the case, The auxiliary storage unit 314 which are various drive devices stored in storages, such as CD-R, CD-RW, DVD-RAM, DVD-RW, or magnetic tape, by considering received medical information as backup, The authentication processing part 302 which carries out authenticating processing to the various terminal units 100, The authority treating part 304 which checks an access permission to access from the various terminal units 100, The retrieving processing part 306 which searches to medical information DB31, and the data storage treating part 308 which carries out processing which stores data in DB31, The data maintenance treating part 310 which performs cancellation or compression processing according to a retention period and a compression ratio which are set up by a legal preservation term and user in medical information stored in DB31, The remuneration calculation part 312 which carries out calculation about remuneration, such as insurance mark to reference of medical information, is formed. Information stored in medical information DB31 is explained using drawing 7. In medical information DB31, for every user, for example, the information (user codes, a name, an address, date of birth, etc.) 3100 which identifies a user who URL is provided, and (1) encryption is done and is saved below at the URL, (2) Man and woman's identification information 3102 and the medical checkup result 3104 which needs security protection, such as (3) cancers and an acquired immunodeficiency syndrome, (4) The pertinent information 3106 at the time of image acquisition, such as information relevant to a general medical checkup, and an X-ray picture (conditions of the date, a creation medical practitioner code, a place (medical institution code), etc.), (5) A general medical checkup result and the clinical recording information 3108 including image sound information and text information of an X-ray picture, an electrocardiogram, an ultrasonic wave, an endoscope, etc. are stored. About the personal identification information 3100 and information other than man-and-woman identification information 3102, storing time, the retention period information 196, and the compression ratio information 198 are added and saved with medical information itself.

[0016]Next, a process flow of a system of drawing 1 explained using drawing 1 thru/or drawing 7 is explained using drawing 8 thru/or drawing 23. Drawing 8 explains a process flow in the doctor terminal 7 in a situation where user IC card 19b and medical practitioner IC card 21 are inserted in IC card reader writers 102 of the doctor terminal 7. However, about the user terminal 19 and a

reference process, it carries [setting processing / storage processing, a reference process, and] out also at a laboratory doctor terminal. First, it is judged whether there was any specification of an emergency (Step S1). If it is an emergency, the emergency treating part 122 will judge whether read-out of the medical information 202 for emergency reference stored in user IC card 19b was able to be ordered (Step S25). When read-out of the medical information 202 for emergency reference is able to be ordered, the emergency treating part 122 checks whether specific cards, such as medical practitioner IC card 21 or an IC card of ******, are inserted in IC card reader writers 102 (Step S29). For example, it may be the composition that it asks for an input of a password and the authentication processing part 108 is made to carry out authenticating processing. When a specific card is not inserted in IC card reader writers 102 and authenticating processing goes wrong, a read-out failure is displayed on the display device 120, and processing is ended. On the other hand, a specific card is inserted in IC card reader writers 102, and when authenticating processing is carried out and it succeeds in authenticating processing, the medical information 202 for emergency reference is read from user IC card 19b, and it displays on the display device 120 (Step S31). Thus, since the medical information 202 for emergency reference is [that there is nothing] acquirable with regards to the person himself/herself in an emergency, first-aid treatment can be given immediately. When read-out of the medical information 202 for emergency reference is not directed in Step S25, emergency processing explained in detail later is carried out (Step S27). After emergency processing shifts to Step S7. When there is no specification of an emergency, IC card reader writers 102 read the personal information 190 from user IC card 19b (Step S3). And the authentication processing part 108 asks a user for an input of a password, and carries out authenticating processing using a password which a user entered (Step S5). That is, a password contained in the personal information 190 stored in user IC card 19b is compared with an entered password. When attestation goes wrong (step S6:No route), an authentication failure is displayed on the display device 120, and processing is ended. On the other hand, when it succeeds in attestation (step S6:Yes route), the display processing part 112 displays a processing menu on the display device 120 (Step S7). A delegation of power [here as opposed to preservation of medical information, reference of medical information, setting out of an IC card, and a user's doctor in a processing menu] shall be contained. Therefore, in being preservation of medical information, it carries out (Step S9:Yes Route) and storage processing explained in detail later (Step S17). In being reference of medical information, it carries out (Step S11:Yes Route) and a reference process explained in detail later (Step S21). In being setting out of an IC card, (Step S13:Yes Route) and the IC card setting processing part 114 carry out setting processing explained in detail later (Step S19). In being processing of a delegation of power, it carries out delegation-of-power processing which (Step S15:Yes Route) and the patient treating part 124 use drawing 9 behind, and explain in detail (Step S23).

[0017]Next, emergency processing of Step S27 of drawing 8 is explained. If it shifts to this processing, a representative's (for example, family) IC card will be inserted in IC card reader writers 102, and IC card reader writers 102 will read a representative's personal information from an IC card of the representative concerned (drawing 9: Step S35). Next, the representative

information 200 is read from an IC card of the person himself/herself (Step S37). And the emergency treating part 122 judges whether you are the designated representative as whom a representative was specified by the person himself/herself (Step S39). That is, it is judged whether user codes contained in a representative's personal information are contained in the read representative information 200. Since it is not a just representative when a representative who inserted an IC card is not the appointed representative, use of user IC card 19b is refused. On the other hand, when a representative is the appointed representative, representative authenticating processing is carried out (Step S41). The authentication processing part 108 requires an input of a password of a representative, and compares with a password contained in representative personal information read at Step S35. If a representative's authenticating processing is successful (step S43:Yes route), processing of drawing 9 will be ended and it will shift to Step S7 of drawing 8. On the other hand, if a representative's authenticating processing goes wrong (step S43:No route), an authentication failure will be displayed on the display device 120, and processing will be ended. If a just representative's IC card is prepared by this and authenticating processing is successful, the same processing as a case where attestation by the person himself/herself is successful can be carried out. Although it has been the processing which checks first whether you are a designated representative in drawing 9, after carrying out a representative's authenticating processing first, it is also possible to make it a process flow which checks whether you are a designated representative.

[0018]Next, storage processing (drawing 8: Step S17) of medical information is explained using drawing 10. First, the medical information acquisition part 104 acquires medical information (Step S45). For example, incorporate a blood pressure value from a sphygmomanometer, an X-ray picture is incorporated from an X ray machine, or information on an electronic chart is incorporated from an electronic chart system. And about picture information, JPEG2000 compression and the decompression part 106 carry out compression processing of JPEG2000 (Step S47). JPEG2000 is the compression technology [resolution hierarchization is possible and] which can compress both without those with a loss and a loss. Compression without a loss is required and compression with a loss is performed within a retention period specified by a user by this embodiment till a legal preservation term about picture information contained in medical information for storage capacity reduction after a legal preservation term. If compression is made by JPEG2000, it will mean that compression processing of arbitrary compression ratios with a loss was made by deleting a part of information. A display by resolution of the portion can also be performed only by a part of picture information which received. For details, refer to http:/data as for which /www.jpeg.org/JPEG2000.htm reaches and which are linked. And IC card reader writers 102 read data writing point DB center URL194, the retention period information 196, and the compression ratio information 198 from user IC card 19b (Step S49). And the communications department 118 transmits medical information (a creation medical practitioner code is added), the retention period information 196, and the compression ratio information 198 to data writing point DB center URL194 (Step S51). Under the present circumstances, a write request including certification information included, for example in the personal information 190 on user IC card 19b

is transmitted for authenticating processing and authority confirming processing in the DB center server 3. Or it may be made to transmit after creating certification information using the cryptographic key 192. In order to perform secretly information exchange between the DB center server 3 and the doctor terminal 7, medical information, the retention period information 196, and the compression ratio information 198 are enciphered by a key for communication of the cryptographic key 192.

[0019]Here, in the authenticating processing and authority confirming processing in the DB center server 3, it shall be satisfactory, and transmission of medical information etc. should be completed. If it does so, the information update in user IC card 19b will judge the IC card setting processing part 114 in necessity (Step S53). For example, change of a telophase about the available term information 206 on the DB center server 3 (health information URL204) in necessity. When the medical practice which the medical institution in which the doctor terminal 7 is installed is registered into the medical institution code 207, or was performed this time is already registered into medical checkup / medical-examination classification 208 or medicine is prescribed, it is checked that it is whether it is the medicine which should update the medical information 202 for emergency reference. When the information update in user IC card 19b is required, the IC card setting processing part 114 makes IC card reader writers 102 write update information in user IC card 19b. When an information update is unnecessary, it shifts to Step S57. And when operation is carried out with the doctor terminal 7, the patient treating part 124 records data writing point DB center URL194 (for example, the health information URL204 [newest]) on the memory storage of medical practitioner IC card 21 or the doctor terminal 7 (Step S57). Thereby, the medical practitioner can see now later about the medical information which was created by itself and stored.

[0020]Next, the storage processing in the DB center server 3 to the storage processing in the doctor terminal 7 of drawing 10 is explained using drawing 11. First, if the communications department 300 of the DB center server 3 receives a write request from the doctor terminal 7 (Step S61), the authentication processing part 302 will carry out authenticating processing (Step S63). Authenticating processing is carried out using the certification information received from the doctor terminal 7. When attestation goes wrong, the notice of a purport which failed in (Step S65:No Route) and attestation is transmitted to the doctor terminal 7, and processing is ended. On the other hand, when it succeeds in attestation, the authority treating part 304 carries out (Step S65:Yes Route) and authority confirming processing (Step S67). Authority confirming processing is explained in detail later. If there is no authority (step S69:No route), those without authority will be transmitted to the doctor terminal 7, and processing will be ended. On the other hand, when it is judged that there is authority, processing for saving the medical information etc. which (Step S69:Yes Route) and the data storage treating part 308 received to medical information DB31 is carried out. That is, the data storage treating part 308 carries out decoding processing to plaintext-ized preservation object data, when medical information etc. are enciphered (Step S71). Since there are medical information etc. which are saved enciphered, decoding processing is not performed in that case. Next, medical information, the retention period

information 196, the compression ratio information 198, and a storage date are written in data writing point DB center URL194 of a user (Step S73). The data storage treating part 308 stores also in the auxiliary storage unit 314 the same data as the data written in data writing point DB center URL194 (Step S75). Thus, medical information, the retention period information 196, and the compression ratio information 198 can be made to store in the DB center server 3 safely now. It can use, if there is user IC card 19b by this wherever medical information may be in. Since the retention period information 196 and the compression ratio information 198 are saved with medical information, data storage management can be carried out efficiently.

[0021]Next, the reference process (Step S21 of drawing 8) of medical information is explained using drawing 12. In carrying out a reference process, IC card reader writers 102 read health information URL204 and pertinent information (the use organization information 206, the medical institution code 207, medical checkup / medical-examination classification 208, reference compensation information 209) from user IC card 19b (Step S81). Next, the display processing part 112 displays a retrieval menu on the display device 120 (Step S83). For example, a period, a place (medical institution), medical checkup / medical-examination classification, and the retrieval menu containing the input column of the contents (keyword specification, the kind of information, etc.) of information are displayed. On the other hand, a user or a medical practitioner inputs a search condition using the input device 121, and the search pretreatment part 110 acquires the search condition input concerned (Step S85). And the search pretreatment part 110 determines retrieval destination health information URL based on the use organization information 206, the medical institution code 207, and medical checkup / medical-examination classification 208 grade (Step S87). Since it is inefficient, transmitting retrieval required to all the DB center servers 3 extracts health information URL which transmits retrieval required and can obtain search results. And the communications department 118 transmits a search condition to the DB center server 3 of retrieval destination health information URL (Step S89). Under the present circumstances, a reference request including the certification information included, for example in the personal information 190 on user IC card 19b is transmitted for the authenticating processing and authority confirming processing in the DB center server 3. Or it may be made to transmit after creating certification information using the cryptographic key 192. The search conditions which transmit every DB center server 3 depending on a search condition may differ. That is, it is generated also when only a part is transmitted among the acquired search conditions.

[0022]Here, in order to explain simply, in each DB center server 3, by authenticating processing and authority confirming processing, it shall be satisfactory and search should be carried out in each DB center server 3. If it does so, each DB center server 3 will transmit the information relevant to data volume to the doctor terminal 7. According to this, the communications department 118 receives data volume pertinent information (Step S91), and the display processing part 112 computes the time frame to data display, and it displays it on the display device 120 (Step S93). Thus, by displaying a time frame, a medical practitioner and the user can know a rule of thumb. Calculation of a time frame is calculable with the data volume and the bit rate which were received from the DB center server 3. The information on numbers, such as

picture information and a voice information, is received from the DB center server 3, for example, and it may be made to calculate near time with the number. When information, including a pixel number, a gradation number, a compression ratio, etc., is received from the DB center server 3 about a picture, the data volume transmitted by this is calculated and hour corresponding is calculated based on a bit rate. When sound recording time and information, including a compression ratio etc., are received from the DB center server 3 in the case of a voice information, the data volume transmitted by this is calculated and hour corresponding is calculated based on a bit rate. And the communications department 118 receives medical information (Step S94). The communications department 118 accumulates the medical information sent temporarily, and outputs received data to JPEG2000 compression and the decompression part 106, or the display processing part 112. When the medical information compressed by JPEG2000 is received, JPEG2000 compression and the decompression part 106 carry out thawing treatment (Step S95). When JPEG2000 is being used, thawing treatment can be carried out in the stage which received required information, for example according to the resolution (pixel number) of the indication frame of picture information. And the display processing part 112 displays the medical information received to the display device 120 (Step S97). The display processing part 112 carries out processing which rearranges the medical information received from each DB center server 3 in order of preservation (generating) time, or arranges information to compensate for screen constitution. There is no necessity of displaying all the search results on one screen, and it divides into two or more screens according to a predetermined rule, and may be made to display. In this case, when the display of the next screen is directed, the display processing part 112 takes out the medical information accumulated temporarily, and constitutes and displays a screen.

[0023]The communications department 118 receives compensation information from each DB center server 3, the display processing part 112 totals, and it displays on the display device 120 (Step S99). In this system, insurance mark do not occur at the time of storing of medical information, but it generates at the time of reference. It may be a form which receives information about a throughput, for example from the DB center server 3, and calculates actual compensation information about compensation information using the reference compensation information 209. Also when payment systems, such as a progress payment or result payment, are specified as the reference compensation information 209, a certain sake, For example, it may be a form which it decides to transmit compensation information of a progress payment from the DB center server 3, and the display processing part 112 displays compensation information received when a progress payment was specified as it is based on the reference compensation information 209, and is corrected and displayed on a constant sum in result payment. And when coded data is included in medical information, it is judged whether the amendment ordered (Step S101). Although stated even in a top, coded data included in medical information changes even an exception of for example, normal and abnormalities depending on how to take a threshold value. A threshold value may change with progress of medicine and may change also with hospitals. For example, the correction information server 15 is prepared and it enables it therefore, to refer to information for

amendment. When amendment does not order at Step S101, (Step S101:No Route) and processing are ended. On the other hand, when amendment orders, the communications department 118 transmits a correction information demand to the correction information server 15 (Step S103). For example, classification of required information on amendment is transmitted. If the communications department 118 receives correction information (threshold value information etc.) from the correction information server 15, using the correction information (threshold value information etc.) concerned, the correction processing section 116 will carry out a compensation process to the original medical information, and will display on the display device 120 (Step S105). It may be the composition which transmits medical information before amendment to the correction information server 15, and receives and displays medical information after amendment from the correction information server 15. In the correction information server 15, reception of a correction information demand will take out the newest threshold value information concerning the information kind concerned with reference to an information kind included in a correction information demand. And this threshold value information is transmitted to the doctor terminal 7 which has transmitted a correction information demand. When the medical information itself is received, judgment information over medical information, etc. are created based on the newest threshold value information, and it transmits to the doctor terminal 7 of a transmitting agency.

[0024]Next, a reference process flow in the DB center server 3 is explained using drawing 13. First, if the communications department 300 of the DB center server 3 receives a reference request from the doctor terminal 7 (Step S111), the authentication processing part 302 will carry out authenticating processing (Step S113). Authenticating processing is carried out using certification information received from the doctor terminal 7. When attestation goes wrong, (Step S115:No Route) and an authentication failure are replied to the doctor terminal 7, and processing is ended. On the other hand, when it succeeds in attestation, the authority treating part 304 carries out (Step S115:Yes Route) and authority confirming processing (Step S117). Authority confirming processing is explained in detail later. If there is no authority (step S119:No route), those without authority will be transmitted to the doctor terminal 7, and processing will be ended. On the other hand, when it is judged that there is authority, (Step S119:Yes Route) and the retrieving processing part 306 perform retrieval processing according to a received search condition (Step S121). Next, the retrieving processing part 306 makes the communications department 300 transmit data volume pertinent information concerning search results to the doctor terminal 7 (Step S123). Although stated even in a top, it may be the data volume itself and they may be information, including a picture or the number of audio, a compression ratio, a pixel number and a gradation number, sound recording time, a compression ratio, etc. And the communications department 300 is made to transmit search results by the retrieving processing part 306 to a doctor terminal (Step S125). The remuneration calculation part 312 calculates compensation information, such as insurance mark, to the communications department 300 with a transmitted data amount etc., and makes it transmit it to the doctor terminal 7 (Step S127). Compensation information is recorded on the DB center server 3. It is because it is behind

needed by demand processing etc. Thus, he can aim at reduction of health care costs while he can also use the past inspection result etc. now and eases a user's inspection burden, since a user or the medical practitioner can refer to the past medical information.

[0025]Next, IC card setting processing is explained using drawing 14. If IC card setting processing is chosen by a medical practitioner or user, the display processing part 112 will display a selection picture of a setting-out item on the display device 120 (Step S131). For example, they are data writing point DB center URL194, affiliation (information of a school and a company, a health insurance society, etc.) included in the personal information 190, the retention period information 196, the compression ratio information 198, the representative information 200, and the medical information 202 grade for emergency reference. And since a user or a medical practitioner inputs information corresponding to a change item, the IC card setting processing part 114 receives the inputted information concerned (Step S133). And IC card reader writers 102 write inputted information in user IC card 19b (Step S135). It may be the composition that the IC card setting processing part 114 checks whether actually invalid data is inputted by displaying a confirmation screen before writing in.

[0026]Next, delegation-of-power processing is explained using drawing 15 thru/or drawing 17. If a delegation of power is chosen, IC card reader writers 102 will read medical practitioner information from medical practitioner IC card 21 (Step S141). And IC card reader writers 102 read health information URL204 and data writing point DB center URL194 from user IC card 19b (Step S143). And the communications department 118 transmits a delegation-of-power registry request which includes medical practitioner information in the DB center server 3 of health information URL204 and data writing point DB center URL194 (Step S145). Under the present circumstances, certification information and the medical practitioner identification information 210 of medical practitioner IC card 21 which are contained in the personal information 190 on user IC card 19b, for example are transmitted for authenticating processing in the DB center server 3. On the other hand, each DB center server 3 carries out processing as shown in drawing 16. if the communications department 300 receives a delegation-of-power registry request (Step S147) -- a user -- authenticating processing of the person himself/herself is carried out (Step S149). When attestation goes wrong, a notice of a purport which failed in (Step S151:No Route) and attestation is transmitted to a request source terminal. When it succeeds in attestation, authenticating processing of (Step S151:Yes Route) and a medical practitioner is carried out (Step S153). When attestation goes wrong, a notice of a purport which failed in (Step S155:No Route) and attestation is transmitted to a request source terminal. moreover -- a case where it succeeds in attestation -- (Step S155:Yes route) and a user -- medical practitioner information is registered corresponding to URL of the person himself/herself (Step S157). For example, as shown in drawing 17, data for a delegation of power is kept by a pair of user URL and medical practitioner information (a medical institution code may be added). Thereby, also when there is access to specific URL by medical practitioner itself from the doctor terminal 7, reference can be permitted if it is the medical practitioner by whom a delegation of power was made.

[0027]Next, maintenance processing of medical information within the medical information DB31

by the DB center server 3 is explained using drawing 18. The data maintenance treating part 310 provided in the DB center server 3, The retention period information 196 and the compression ratio information 198 which carry out processing explained below periodically or irregularly, and arrange medical information which continues increasing within the medical information DB31 and which are attached to medical information first, and storage date information are read (Step S161). And it is judged whether the medical information concerned exceeded a legal term (Step S163). A legal term is set by a kind of medical information. When it is not over a legal term, since special processing is unnecessary, in this stage, it terminates processing. On the other hand, when a legal term is exceeded, it is judged whether a retention period after a legal term is set up (Step S165). Also when a retention period is not added to medical information, for a certain reason, it is checked whether it is added. When not added, since a legal term has passed, medical information is canceled (Step S175). When a retention period saved by being attached at medical information is 0, since it cannot say that a special retention period is set up (or when the same retention period as a legal term is set up from a storage date), it shifts to Step S175 from Step S165, and the medical information concerned is canceled.

[0028]Next, it is checked whether it is after legal term progress and is within a set-up retention period (Step S167). In being after legal term progress and being after a set-up retention period, it cancels the medical information concerned (Step S175). On the other hand, it is judged whether the medical information is image data as it is after legal term progress and is within a set-up retention period (Step S169). Since compression processing does not have necessity if it is not image data, processing is ended. If there is data which serves as a compression object besides image data, it will check at Step S169 also about the data. When it is judged that it is image data, it is checked whether it is ending with compression (Step S171). Since the further processing does not have necessity if it is ending with compression, processing is ended. On the other hand, if it has not compressed, the medical information concerned will be compressed using the compression ratio information 198 added to the medical information concerned (Step S173). However, what is necessary is just to cancel information on a predetermined part according to the compression ratio information 198, when being compressed without a loss according to JPEG2000 from the start. Therefore, processing can be easy and it can carry out now at high speed. Thus, data volume stored in medical information DB31 can be decreased. Since medical information is separately accumulated in the auxiliary storage unit 314, it is possible to take out, although time is taken in case of emergency.

[0029]this embodiment -- a medical practitioner and a user -- it enables it to access medical information DB31, and enables it to do epidemiological research not only to the person himself/herself but to a laboratory doctor However, if it enables it to access medical information indefinitely, the problem of invasion of privacy will arise. According to this embodiment, suppose that an access policy like drawing 19 is adopted. . The 1st line of drawing 19 was shown in drawing 7. (1). The personal identification information 3100 and the 2nd line were shown in drawing 7. (2) The man-and-woman identification information 3102, (3) secrecy medical checkup result 3104 which showed the 3rd line in drawing 7, the pertinent information 3106 at the time of (4) general

medical checkup pertinent information and image acquisition which showed drawing 7 the 4th line, and the 5th line show the access policy to (5) general medical checkup result and the clinical recording information 3108 shown in drawing 7. O shows accessible, x shows an access impossibility, and ** shows access **** about the specified person. Therefore, the family doctor can access about the user who received the delegation of power, and the user who created medical information by himself. The laboratory doctor cannot access about the personal identification information 3100 and the secret medical checkup result 3104, and can access about other portions. A specific laboratory doctor is a laboratory doctor who does special research on a specific field, and can access medical information other than personal-identification-information 3100. The man in the street cannot access others' medical information at all. a user -- the person himself/herself -- a user -- access is permitted per information of the person himself/herself.

[0030]In order to realize such an access policy, the authority check part 304 of the DB center server 3 carries out processing as shown in drawing 20. the beginning -- a user -- a user by the person himself/herself -- it is judged whether it is access to URL of the person himself/herself (Step S181). if -- a user -- a user by the person himself/herself -- in being access to URL of the person himself/herself, it gives an access permit of an access point (Step S187). on the other hand -- a user -- a user by the person himself/herself -- when it is not access to URL of the person himself/herself, it is access by a medical practitioner by whom the delegation of power was done per access point -- it checks (Step S183). For example, when medical practitioner information on the delegation-of-power point (a medical institution code may be included) is stored for every URL as shown in drawing 17, it is checked whether it is specified as the delegation-of-power point in URL and medical practitioner code. In being access by a medical practitioner by whom the delegation of power was done per access point, it gives an access permit to an access point (Step S187). In not being access by a medical practitioner by whom the delegation of power was done per access point, it checks whether it is access by a family doctor who performed information creation of an access point, etc. (Step S185). For example, with reference to information, including a medical practitioner code etc. which are added to medical information of an access point, it is judged whether it is in agreement with a medical practitioner code of an accessing agency, etc. A medical institution code other than a medical practitioner code is doubled, and it may be made to compare. It can be coped with when a medical practitioner's office moves by this. In being in agreement, it permits access to an access point (Step S187).

[0031]On the other hand, in not being in agreement, it judges in access of the laboratory doctor from a specific terminal (address), or access by a specific laboratory doctor (Step S189). It checks that it is access from the specific laboratory doctor terminal 11. When the IC card for specific laboratory doctors exists, it is checked whether it is access from a specific laboratory doctor. As shown in drawing 1, it is necessary to perform a still more nearly special check at the specific laboratory doctor terminal 11 about the laboratory doctor who operates the specific laboratory doctor terminal 11. This processing is described later. In being access of the laboratory doctor from a specific terminal, or access by a specific laboratory doctor, it gives the access

permit of the range (public part) permitted by the access policy shown in drawing 19 (Step S203). On the other hand, in not being access of the laboratory doctor from a specific terminal, or access by a specific laboratory doctor, it checks whether it is a laboratory doctor's access (Step S191). In being a laboratory doctor's access, it gives the access permit of the range permitted by the access policy shown in drawing 19 (Step S203). On the other hand, in not being a laboratory doctor's access, it refuses access (Step S201). If it does in this way, the access policy shown in drawing 19 can be realized, and use of proper medical information can be aimed at.

[0032]If entrance management of the specific laboratory 17 is perfect, although a check in particular with the terminal device for laboratory doctors 11 is unnecessary, it may not be perfect to a laboratory doctor who operates the terminal device for laboratory doctors 11 installed in the specific laboratory 17. A specific laboratory doctor specified specially may exist. In such a case, processing as shown, for example in drawing 21 is carried out by authenticating processing (Step S5) of drawing 8. In drawing 21, the display processing part 112 displays an input request of a password on the display device 120 first (Step S211). A laboratory doctor operates the input device 121, and enters a password, and the authentication processing part 108 acquires password input (Step S213). And a password contained in the laboratory doctor identification information 252 or specific laboratory doctor identification information in IC card 25 for laboratory doctors is read (Step S215), and it is judged whether an input password and a read password were in agreement (Step S217). In not being in agreement, it refuses operation (Step S225). In being in agreement, it judges whether you are a laboratory doctor (Step S219). If it is a laboratory doctor, it will be judged whether you are the laboratory doctor who was provided in the authentication processing part 108 and who was listed by permitted laboratory doctor list (Step S221). In being the listed laboratory doctor, it permits operation (Step S227). Operation will be refused if it is not the listed laboratory doctor (Step S225). On the other hand, if it is not a laboratory doctor, it will be judged whether you are a specific laboratory doctor (Step S223). In being a specific laboratory doctor, it permits operation (Step S227). Thus, if confirming processing is carried out by the terminal unit side, an access policy like drawing 19 is realizable.

[0033]According to the embodiment described above, the retrieval server 13 was not used. This is because the function of the retrieval server 13 was included in the terminal unit 100. Therefore, for example, composition (mainly search pretreatment part 110) which operates some terminal units 100 as the retrieval server 13 is also possible. An example of the reference process of the terminal unit 100 is shown in drawing 22. First, IC card reader writers 102 read health information URL204 and pertinent information (the use organization information 206, the medical institution code 207, medical checkup / medical-examination classification 208, reference compensation information 209) from user IC card 19b (Step S231). Next, the display processing part 112 displays a retrieval menu on the display device 120 (Step S233). For example, a period, a place (medical institution), medical checkup / medical-examination classification, and the retrieval menu containing the input column of the contents (keyword specification, the kind of information, etc.) of information are displayed. On the other hand, a user or a medical practitioner inputs a search condition using the input device 121, and the communications department 118 acquires

the search condition input concerned (Step S235). And the communications department 118 transmits retrieval required including health information URL204, pertinent information, and a search condition to the retrieval server 13 (Step S237). Thus, processing which determines retrieval destination health information URL based on the use organization information 206 which the search pretreatment part 110 carried out, the medical institution code 207, and medical checkup / medical-examination classification 208 grade is not performed with the terminal unit 100. A reference request including the certification information included, for example in the personal information 190 on user IC card 19b is transmitted for the authenticating processing and authority confirming processing in the retrieval server 13 and the DB center server 3. Or it may be made to transmit after creating certification information using the cryptographic key 192.

[0034]Here, in order to explain simply, in each DB center server 3 and the retrieval server 13, by authenticating processing and authority confirming processing, it shall be satisfactory and search shall be carried out in the retrieval server 13 and each DB center server 3. The search results in each DB center server 3 are once transmitted to the retrieval server 13. And the retrieval server 13 transmits the information relevant to data volume to the terminal unit 100. According to this, the communications department 118 receives data volume pertinent information, and the display processing part 112 computes the time frame to data display, and it displays it on the display device 120 (Step S239). Thus, by displaying a time frame, a medical practitioner and the user can know a rule of thumb. And the communications department 118 receives medical information (Step S240). The communications department 118 accumulates the medical information sent temporarily, and outputs received data to JPEG2000 compression and the decompression part 106, or the display processing part 112. When the medical information compressed by JPEG2000 is received, JPEG2000 compression and the decompression part 106 carry out thawing treatment. And the display processing part 112 displays the medical information received to the display device 120 (Step S241). The display processing part 112 carries out processing which rearranges the medical information received from the retrieval server 13 in order of preservation (generating) time, or arranges information to compensate for screen constitution. There is no necessity of displaying all the search results on one screen, and it divides into two or more screens according to a predetermined rule, and may be made to display. In this case, when the display of the next screen is directed, the display processing part 112 takes out the medical information accumulated temporarily, and constitutes and displays a screen. The communications department 118 receives the totaled compensation information from the retrieval server 13, and the display processing part 112 displays on the display device 120 (Step S243).

[0035]An example of a process flow of the retrieval server 13 is shown in drawing 23. First, the retrieval server 13 will carry out authenticating processing, if retrieval required is received from the terminal unit 100 (Step S251) (Step S253). Authenticating processing is carried out using certification information received from the terminal unit 100. When attestation goes wrong, (Step S255:No Route) and an authentication failure are replied to the terminal unit 100, and processing is ended. On the other hand, when it succeeds in attestation, retrieval destination health information URL is determined based on (Step S255:Yes Route), the use organization information

206, the medical institution code 207, and medical checkup / medical-examination classification 208 grade (Step S257). And a search condition is transmitted to the DB center server 3 of search health information URL204 (Step S259). Under the present circumstances, a reference request including certification information included, for example in the personal information 190 on user IC card 19b is transmitted for authenticating processing and authority confirming processing in the DB center server 3. Certification information of the retrieval server 13 may be added. Here, suppose that any problem was not produced in authenticating processing and authority confirming processing in the DB center server 3, either. If it does so, the retrieval server 13 will receive medical information and compensation information which are search results from the DB center server 3 (Step S261). It may be made to carry out processing which totals compensation information received from each DB center server 3 with the retrieval server 13. And the retrieval server 13 transmits data volume pertinent information for calculating a time frame until it receives used to the terminal unit 100 (Step S263). And medical information and compensation information which were received are transmitted (Step S265). If it does in this way, even if it will use the retrieval server 13, a user and the medical practitioner can receive the same service. What is necessary is just to perform processing that the DB center server 3 is also the same.

[0036]As mentioned above, various modification is possible although an embodiment of the invention was described. For example, a step which can replace turn in a process flow or can be performed simultaneously is contained. Equipment and a system outline which it explained by drawing 1 thru/or drawing 7 are an example, and other composition which exhibits same function is possible for them. An information storing mode of medical information DB31 is an example, and can also memorize information with other composition. JPEG2000 is an example and, as for using a compression method of other systems which do same effect so, also possible. Although the authentication processing part 108 shows an example provided in the terminal unit 100 by drawing 2, it is also possible to provide an authentication processing part in an IC card. That is, about authenticating processing performed by the Step [of drawing 8] S5, and terminal unit side of step S41 grade of drawing 9, it may perform by the IC card side. In addition, it may provide in the IC card side also about a part of functions. Although an example which uses URL was shown in a top, it is also possible to change so that other address information may be used. It is also possible to adopt authentication methods, such as a fingerprint instead of a password. The terminal unit 100 also has a case of a medical inspection machine. in this case, it may have composition which is found and carried out to storage processing. Although an example performed on-line about storage processing was shown, form which is carried out off-line is also possible. A program which performs processing which was described above is installed in the terminal unit 100, the retrieval server 13, and the DB center server 3, and the program concerned may be stored in a storage and memory storage, and may be distributed. It is stored in memory storage, such as a server and main memory of a terminal unit, about interim data.

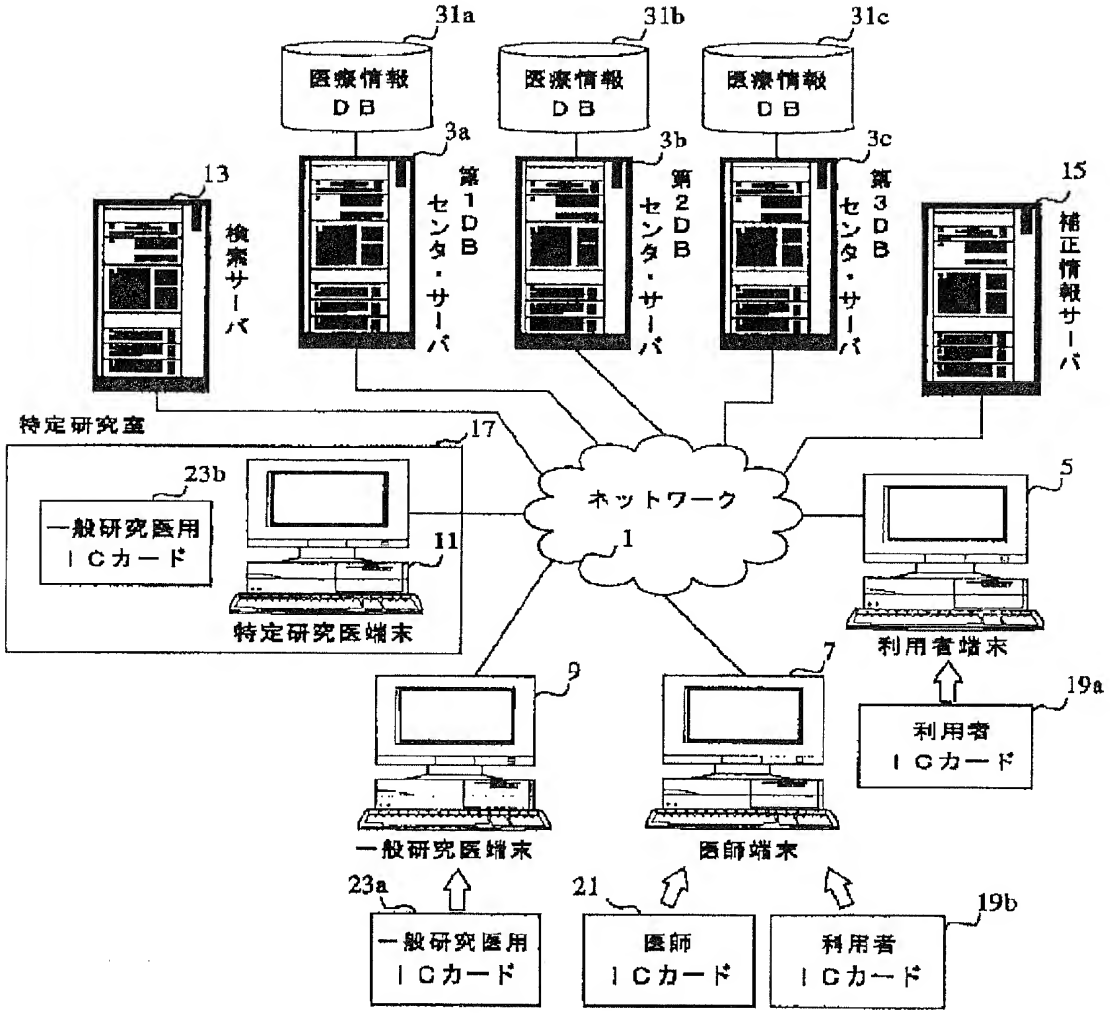
[0037]

[Effect of the Invention]As mentioned above, when two or more database centers which accumulate medical information existed, the information processing technique for using medical

information effectively was able to be provided. In the database center, the information processing technique for managing medical information efficiently was able to be provided. The information processing technique for aiming at use for proper medical information by cooperation with an information storage card was able to be provided.

DRAWINGS

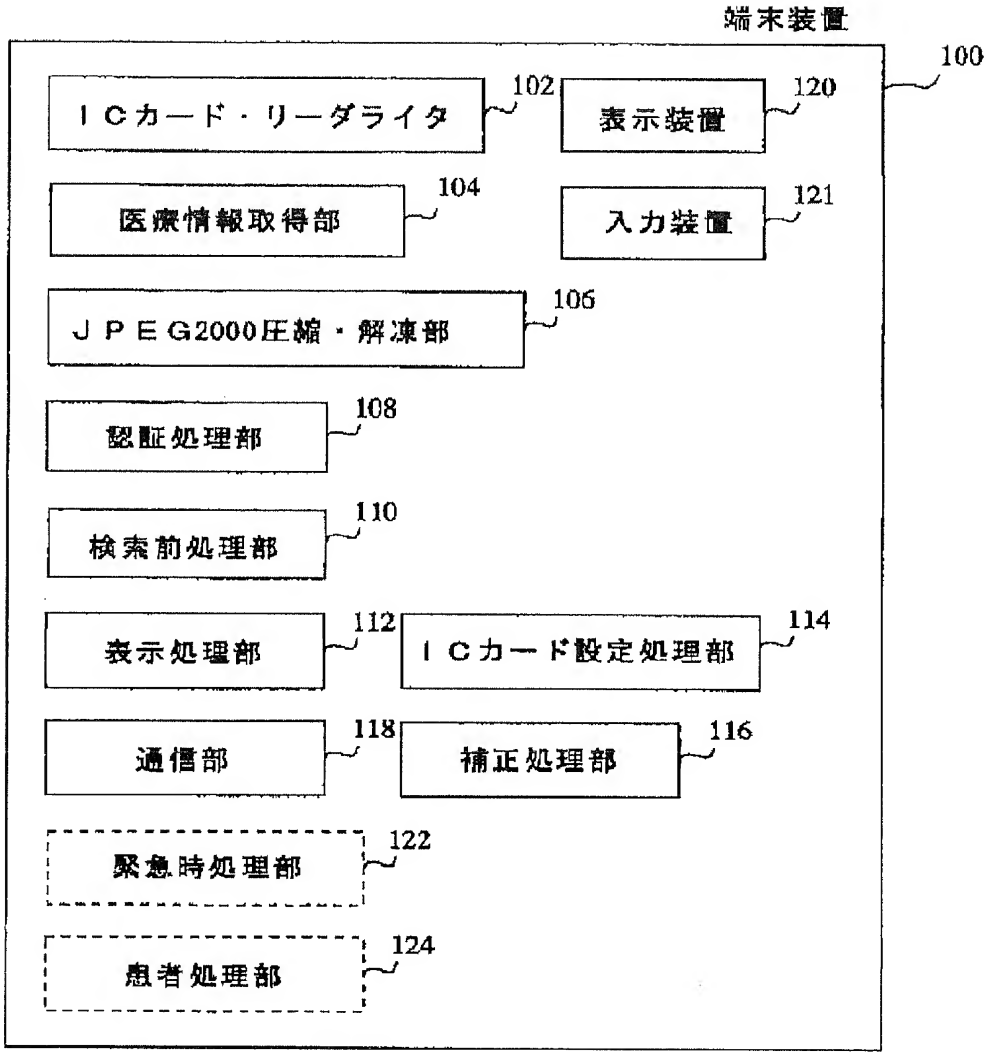
[Drawing 1]



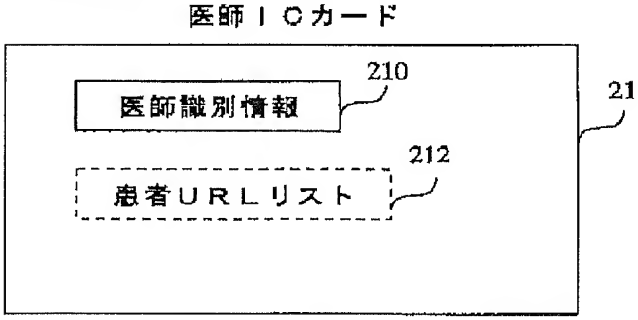
[Drawing 17]

利用者URL	医師情報
www.data.com/~xxx/	abc
	def
	ghi

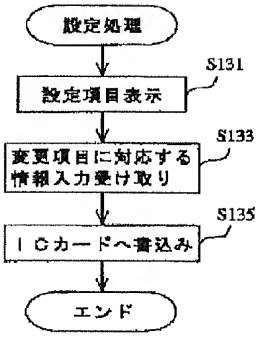
[Drawing 2]



[Drawing 4]



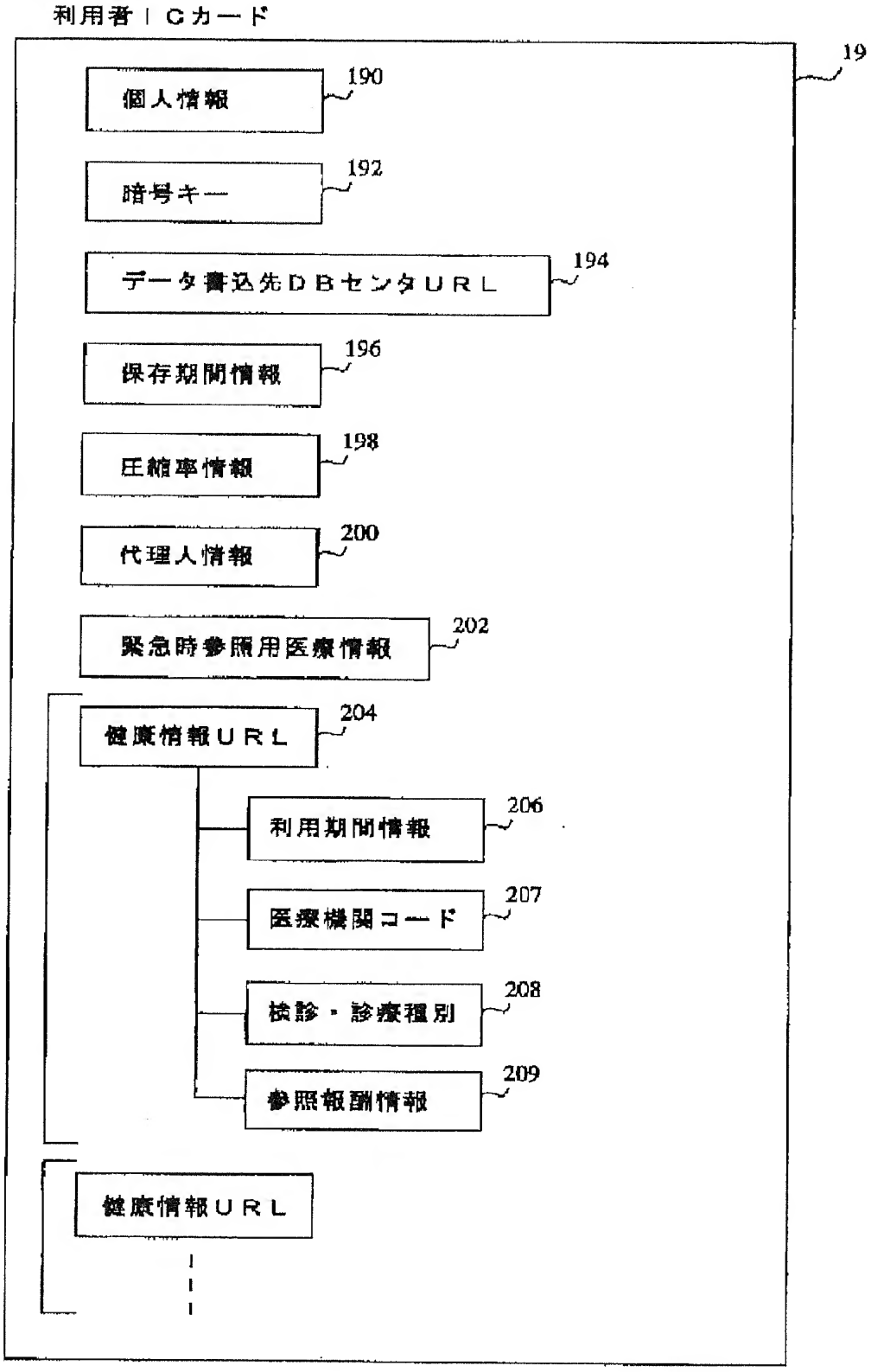
[Drawing 14]



[Drawing 19]

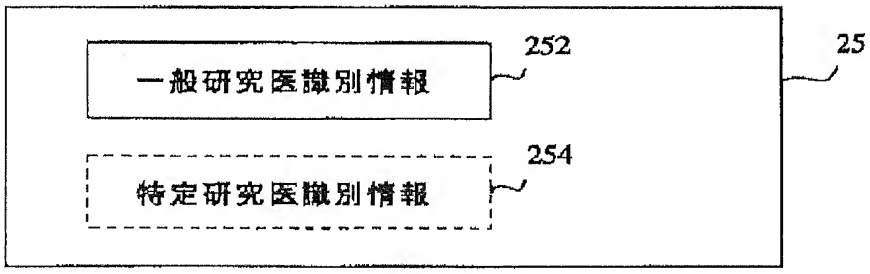
	主治医	一般研究医	特定研究医	一般人	本人
(1)	△	×	×	×	△
(2)	△	○	○	×	△
(3)	△	×	○	×	△
(4)	△	○	○	×	△
(5)	△	○	○	×	△

[Drawing 3]


利用者ＩＣカード
19
個人情報
190
暗号キー
192
データ書込先ＤＢセンタＵＲＬ
194
保存期間情報
196
圧縮率情報
198
代理人情報
200
緊急時参照用医療情報
202
健康情報ＵＲＬ
204
利用期間情報
206
医療機関コード
207
検診・診療種別
208
参照報酬情報
209
健康情報ＵＲＬ

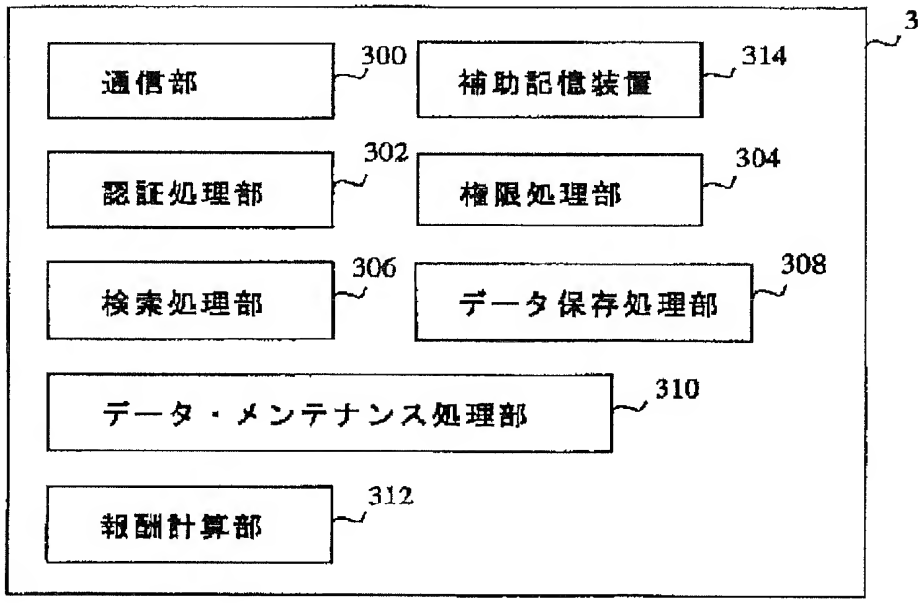
[Drawing 5]

研究医用ＩＣカード

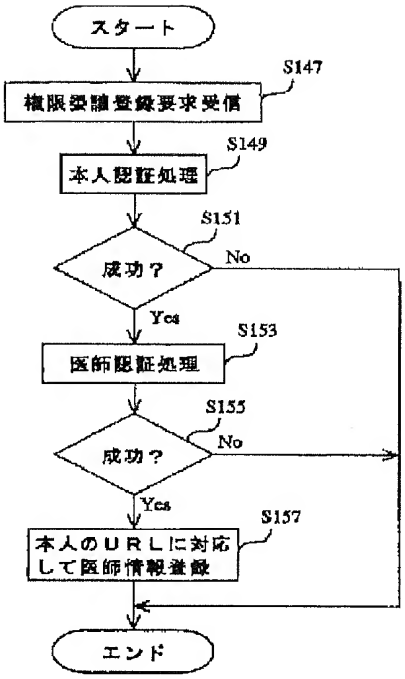


[Drawing 6]

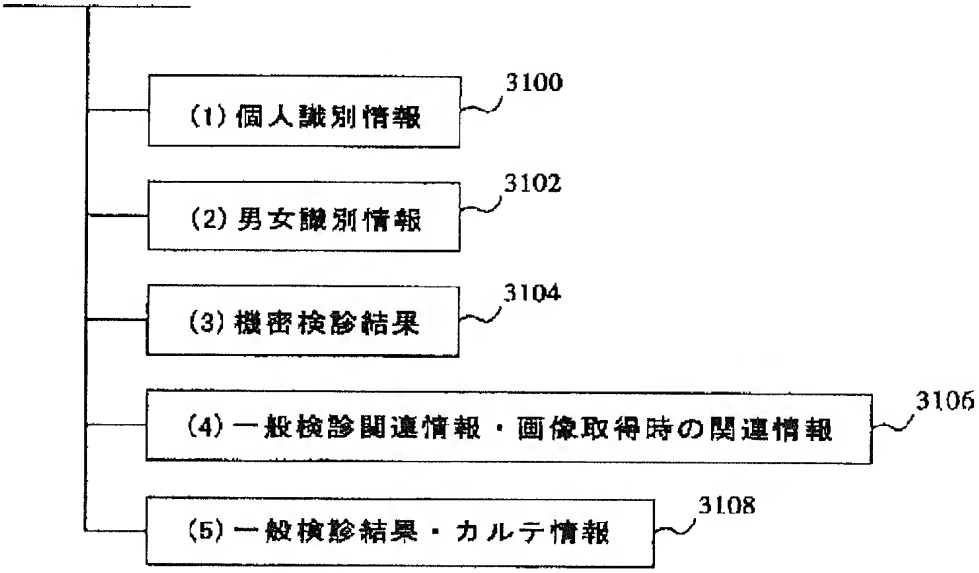
ＤＢセンタ・サーバ



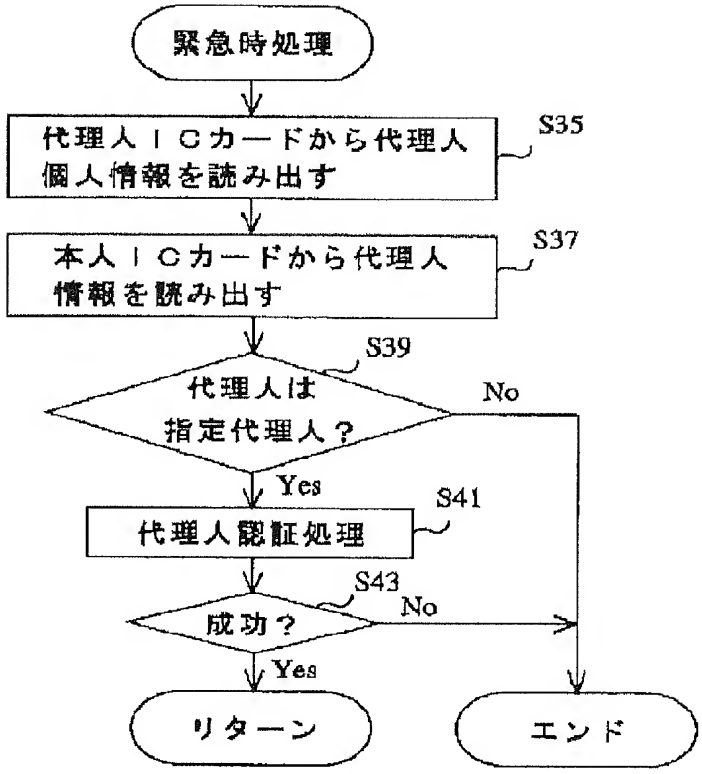
[Drawing 16]



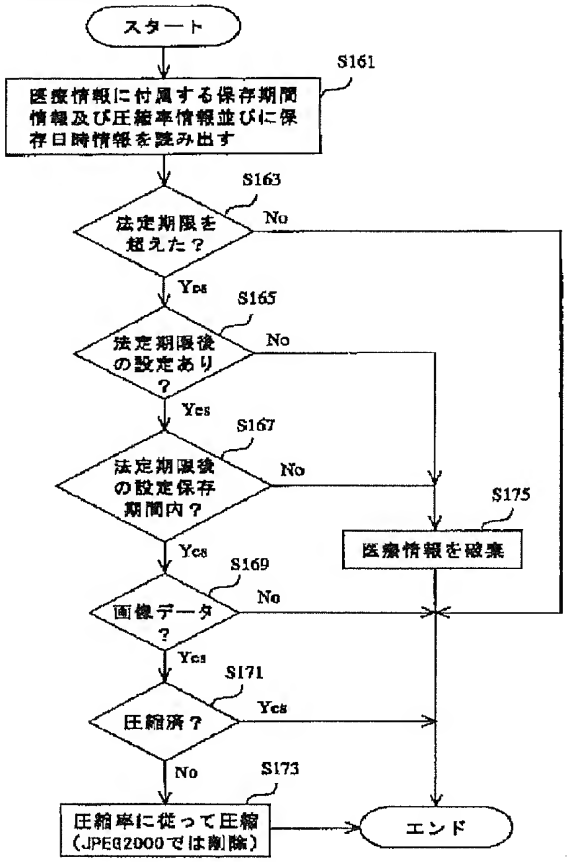
[Drawing 7]



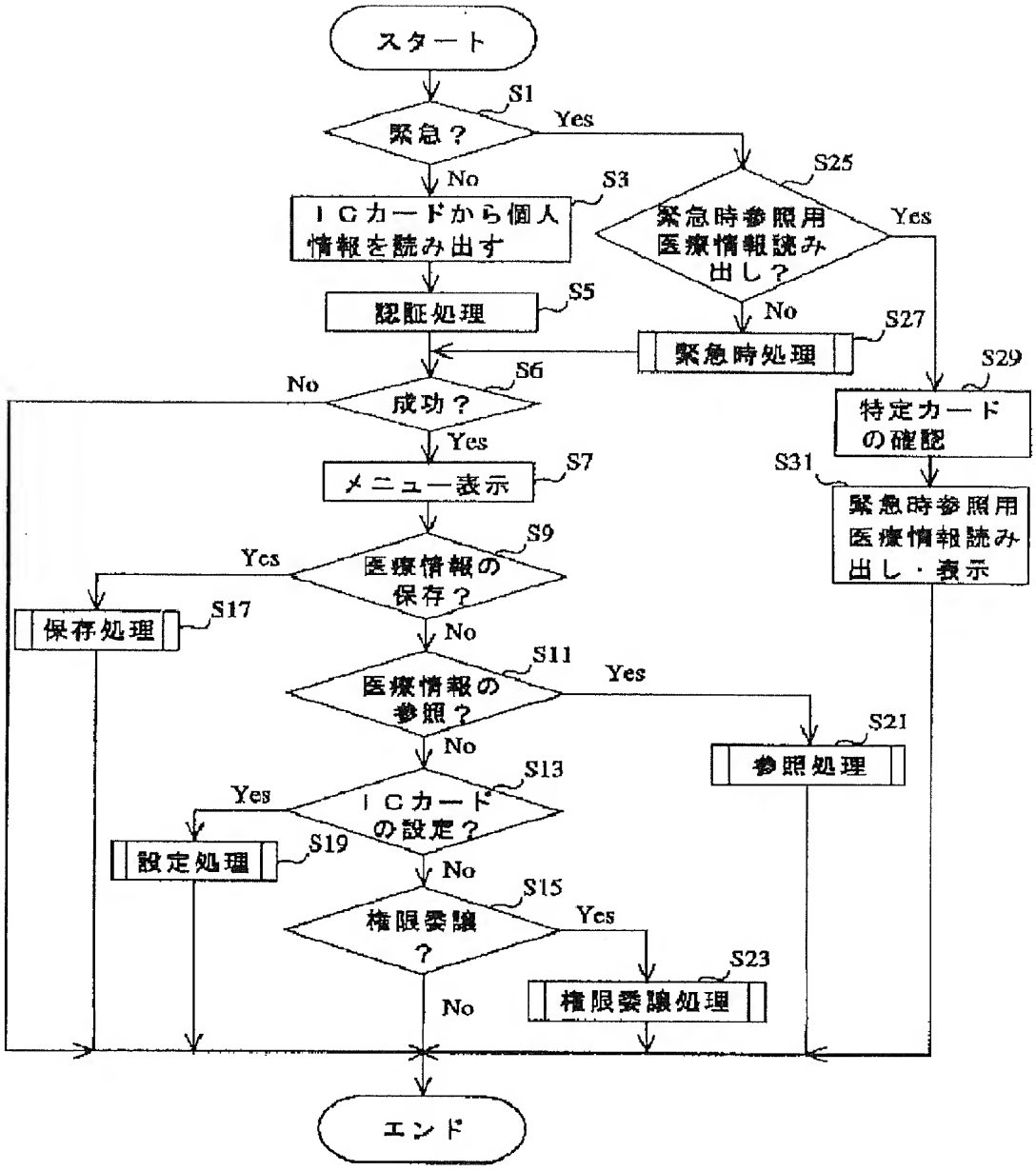
[Drawing 9]



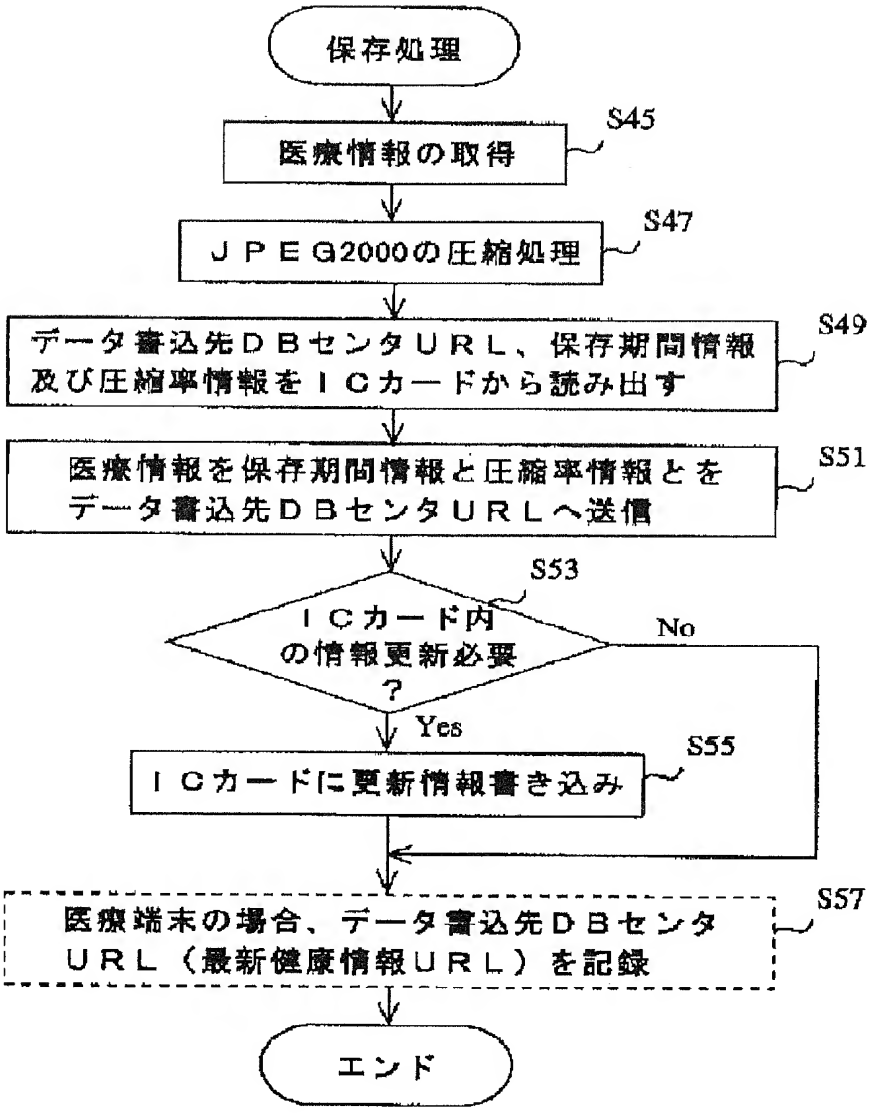
[Drawing 18]



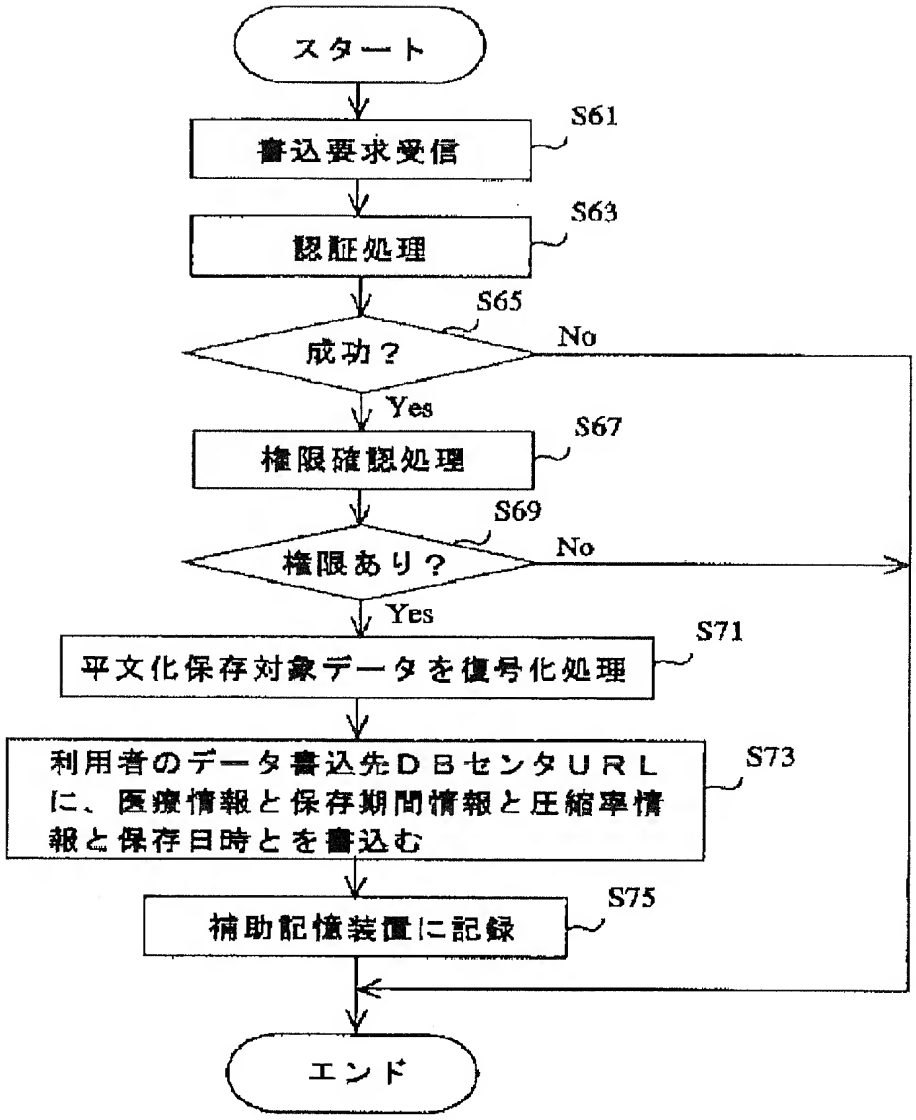
[Drawing 8]


スタート
S1
緊急？
Yes
No
S3
ＩＣカードから個人情報を読み出す
認証処理
S5
S6
No
成功？
Yes
メニュー表示
S7
S9
Yes
医療情報の保存？
保存処理
S17
No
S11
医療情報の参照？
Yes
No
S13
Yes
ＩＣカードの設定？
設定処理
S19
No
S15
権限委譲？
Yes
No
S23
権限委譲処理
S21
参照処理
S25
緊急時参照用医療情報読み出し？
Yes
No
S27
緊急時処理
S29
特定カードの確認
S31
緊急時参照用医療情報読み出し・表示
エンド

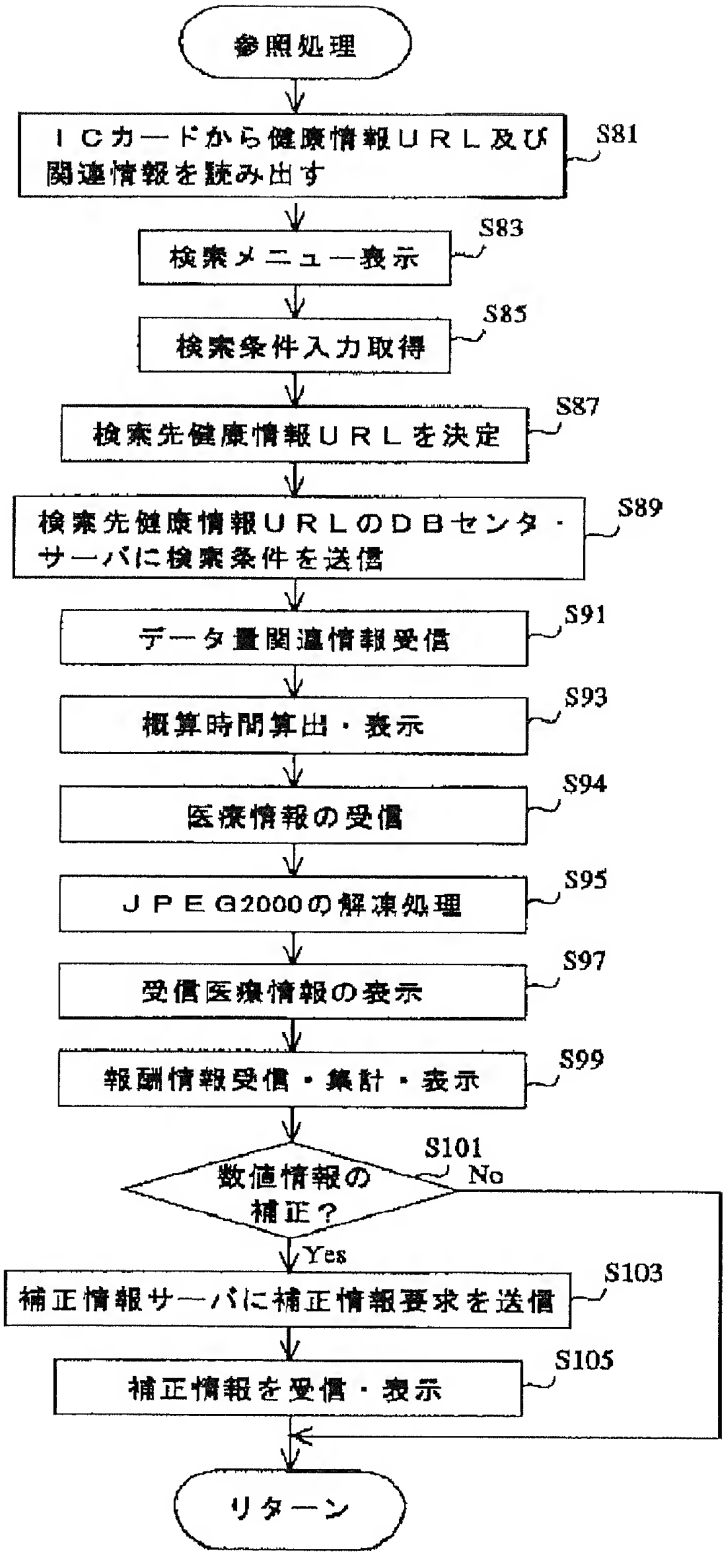
[Drawing 10]


保存処理
S45
医療情報の取得
S47
ＪＰＥＧ2000の圧縮処理
S49
データ書込先ＤＢセンタＵＲＬ、保存期間情報及び圧縮率情報をＩＣカードから読み出す
S51
医療情報を保存期間情報と圧縮率情報とをデータ書込先ＤＢセンタＵＲＬへ送信
S53
ＩＣカード内の情報更新必要？
No
Yes
S55
ＩＣカードに更新情報書き込み
S57
医療端末の場合、データ書込先ＤＢセンタＵＲＬ（最新健康情報ＵＲＬ）を記録
エンド

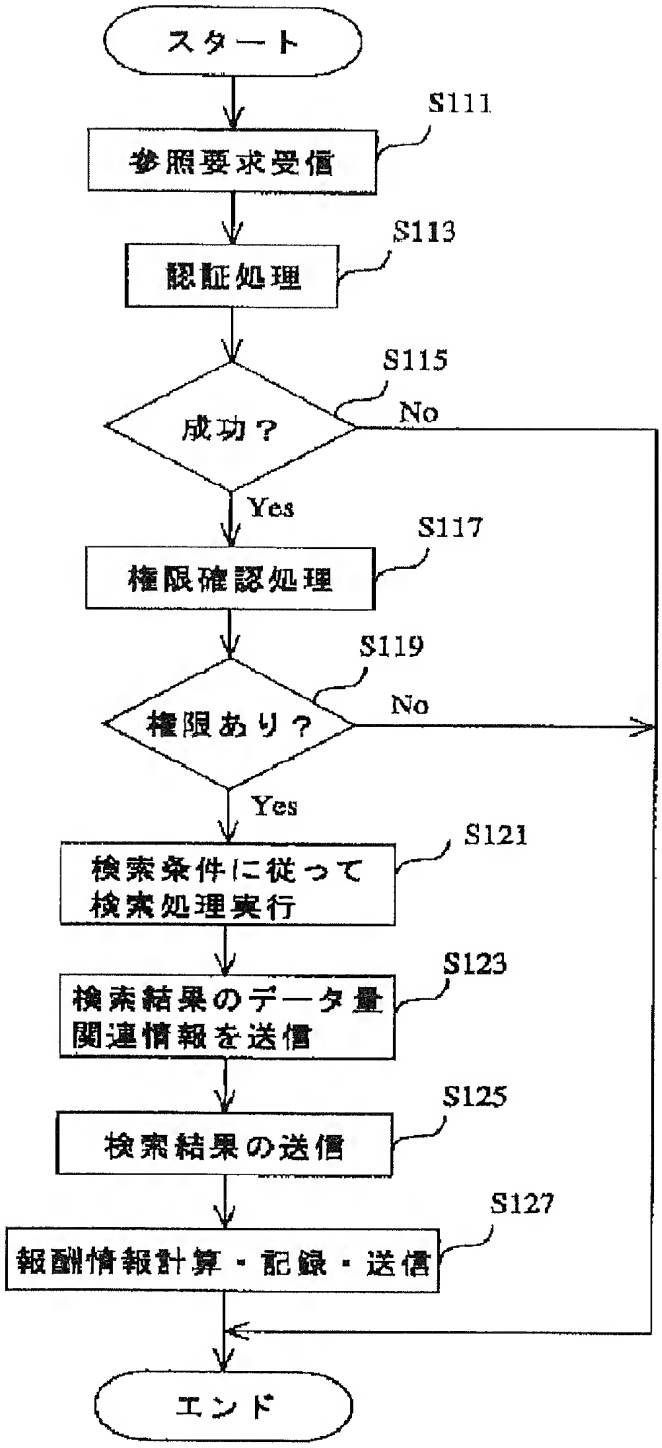
[Drawing 11]


スタート
書込要求受信
S61
認証処理
S63
成功？
S65
No
Yes
権限確認処理
S67
権限あり？
S69
No
Yes
平文化保存対象データを復号化処理
S71
利用者のデータ書込先ＤＢセンタＵＲＬに、医療情報と保存期間情報と圧縮率情報と保存日時とを書込む
S73
補助記憶装置に記録
S75
エンド

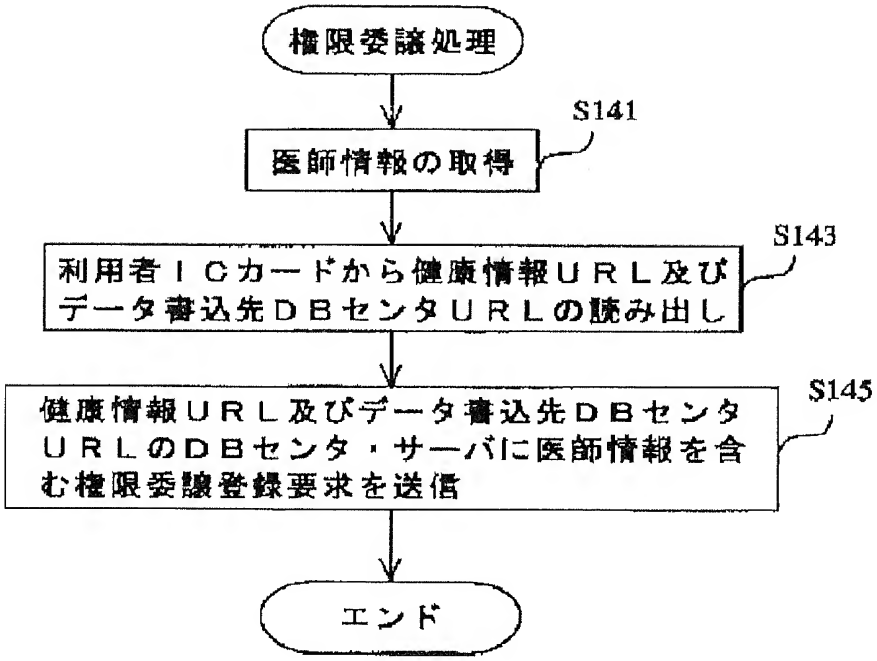
[Drawing 12]


参照処理
ＩＣカードから健康情報ＵＲＬ及び関連情報を読み出す
S81
検索メニュー表示
S83
検索条件入力取得
S85
検索先健康情報ＵＲＬを決定
S87
検索先健康情報ＵＲＬのＤＢセンタ・サーバに検索条件を送信
S89
データ量関連情報受信
S91
概算時間算出・表示
S93
医療情報の受信
S94
ＪＰＥＧ2000の解凍処理
S95
受信医療情報の表示
S97
報酬情報受信・集計・表示
S99
数値情報の補正？
S101
No
Yes
補正情報サーバに補正情報要求を送信
S103
補正情報を受信・表示
S105
リターン

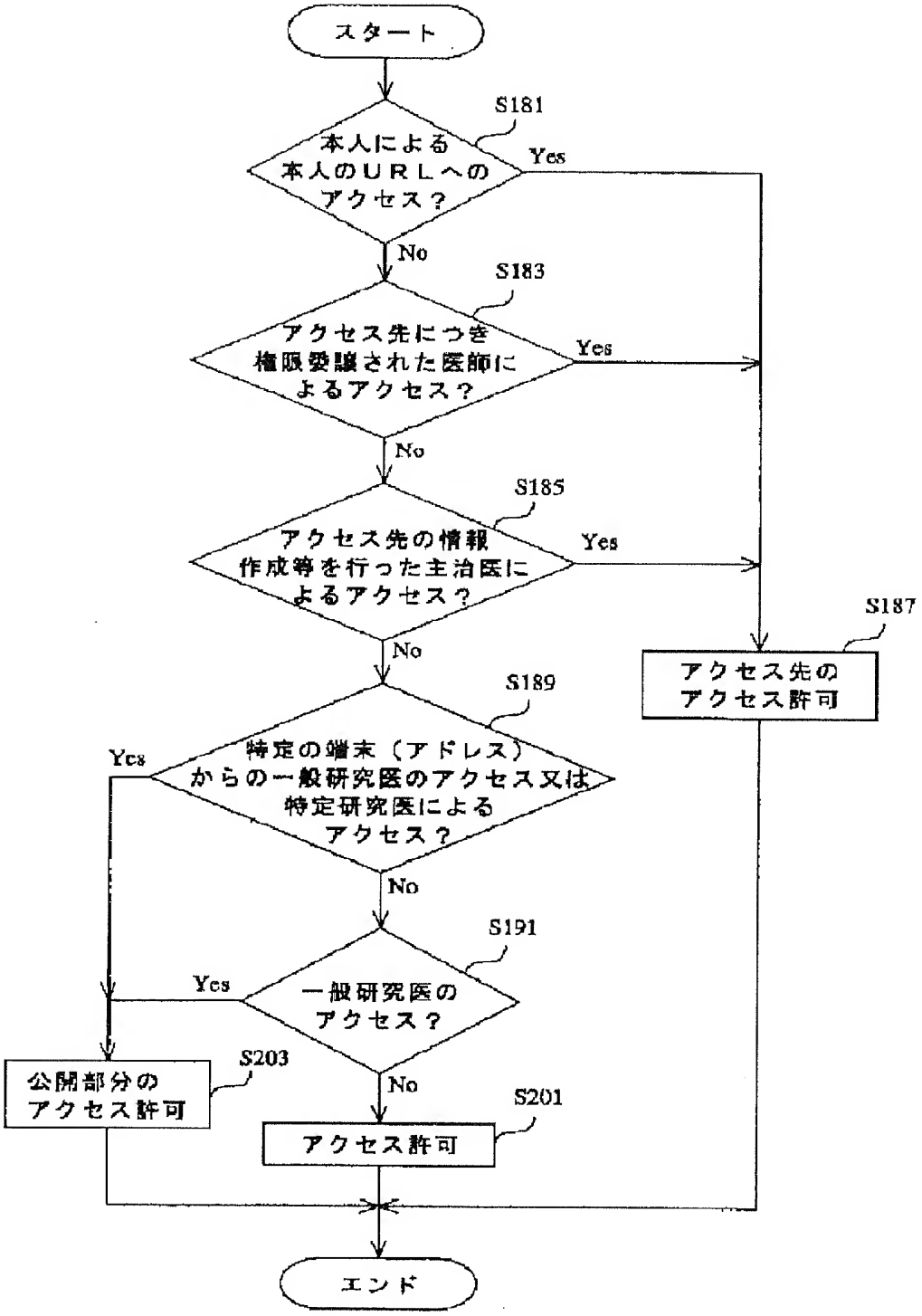
[Drawing 13]


スタート
S111
参照要求受信
S113
認証処理
S115
成功？
No
Yes
S117
権限確認処理
S119
権限あり？
No
Yes
S121
検索条件に従って
検索処理実行
S123
検索結果のデータ量
関連情報を送信
S125
検索結果の送信
S127
報酬情報計算・記録・送信
エンド

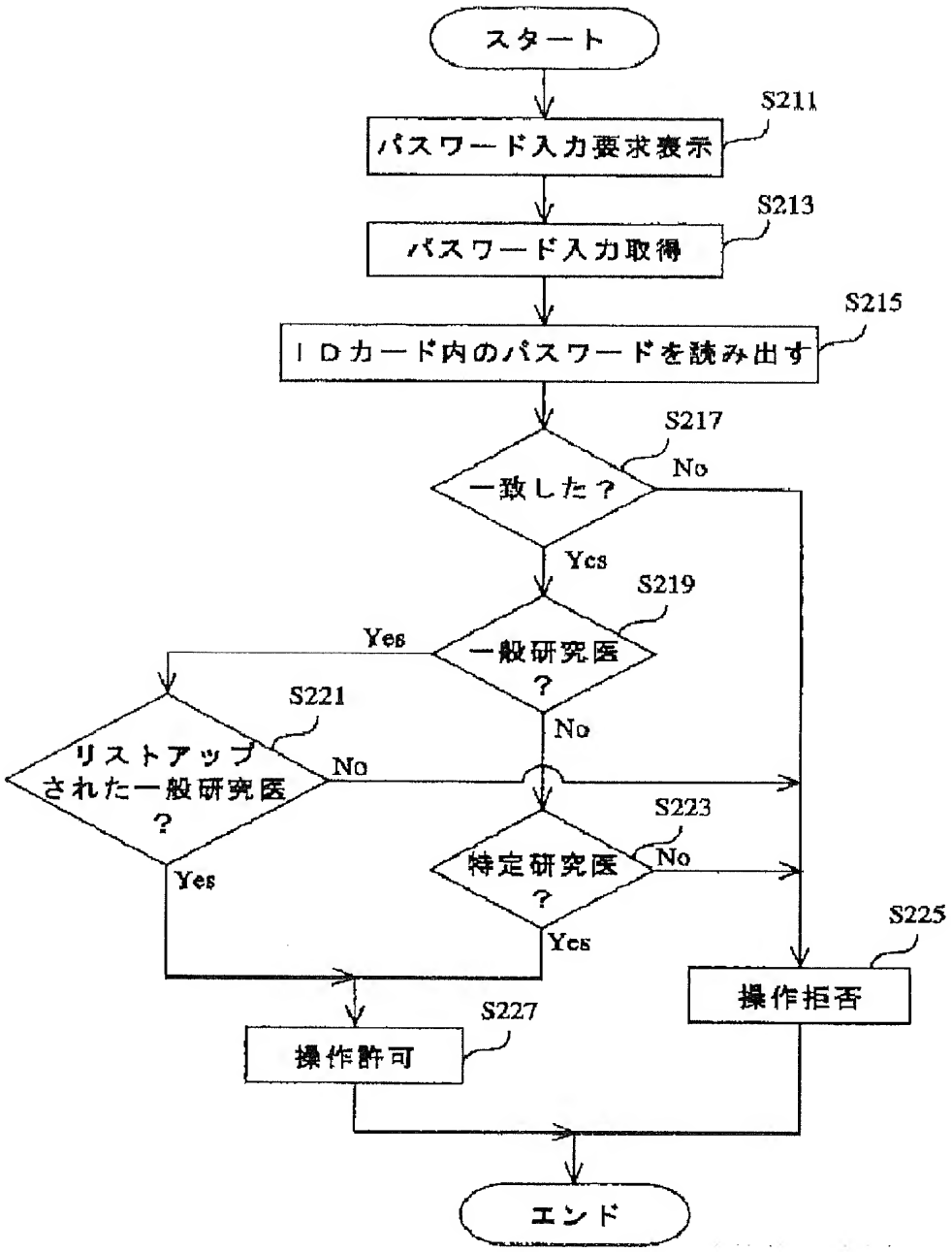
[Drawing 15]


権限委譲処理
S141
医師情報の取得
S143
利用者ＩＣカードから健康情報ＵＲＬ及びデータ書込先ＤＢセンタＵＲＬの読み出し
S145
健康情報ＵＲＬ及びデータ書込先ＤＢセンタＵＲＬのＤＢセンタ・サーバに医師情報を含む権限委譲登録要求を送信
エンド

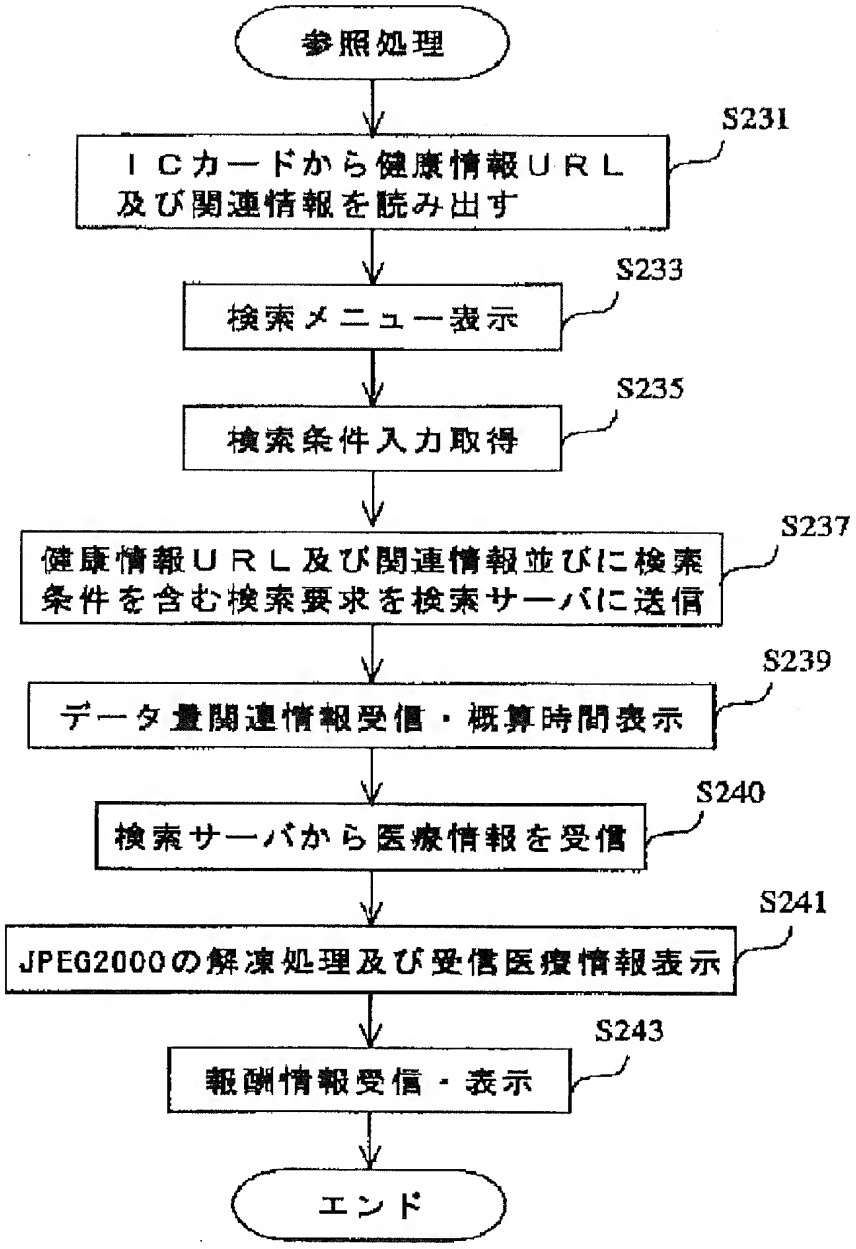
[Drawing 20]


スタート
S181
本人による
本人のＵＲＬへの
アクセス？
Yes
No
S183
アクセス先につき
権限委譲された医師に
よるアクセス？
Yes
No
S185
アクセス先の情報
作成等を行った主治医に
よるアクセス？
Yes
No
S187
アクセス先の
アクセス許可
S189
特定の端末（アドレス）
からの一般研究医のアクセス又は
特定研究医による
アクセス？
Yes
No
S191
一般研究医の
アクセス？
Yes
No
S203
公開部分の
アクセス許可
S201
アクセス許可
エンド

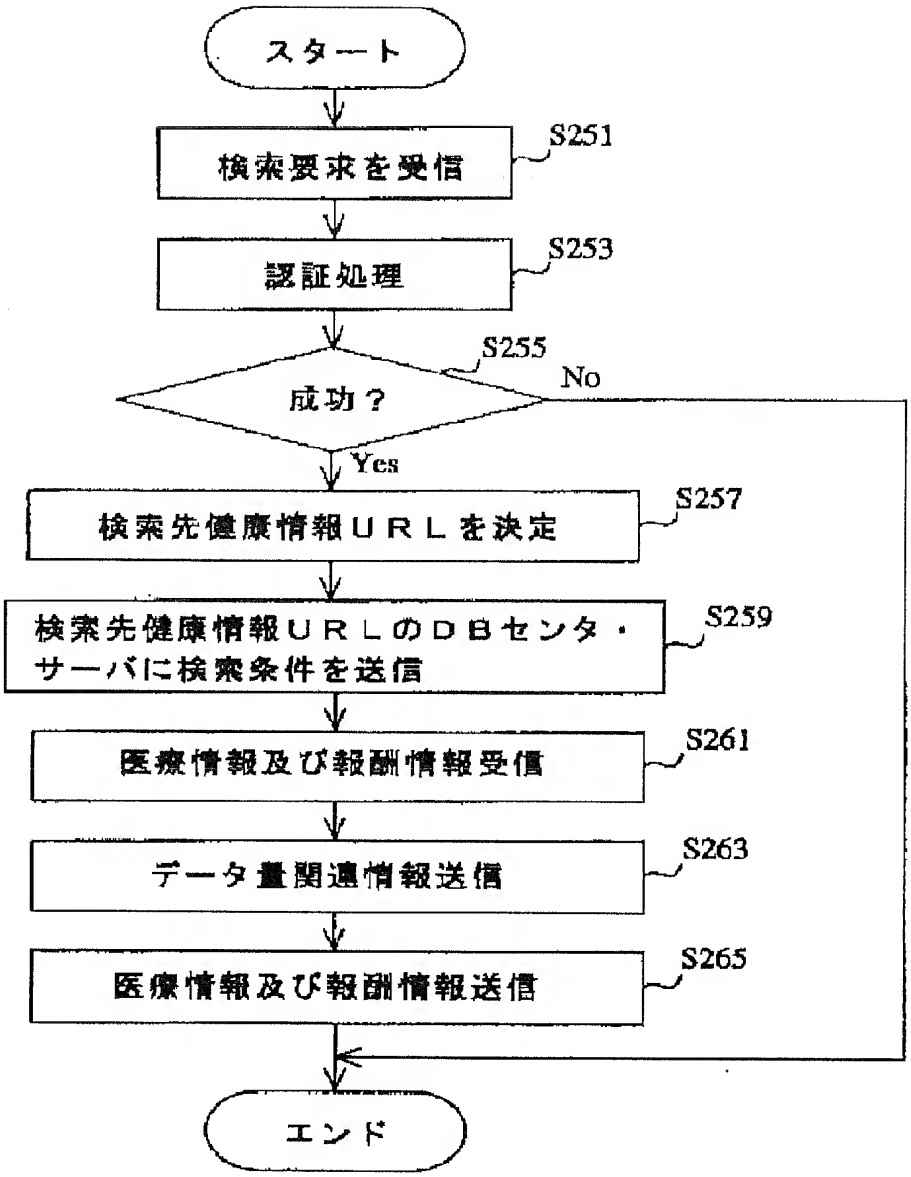
[Drawing 21]


スタート
S211
パスワード入力要求表示
S213
パスワード入力取得
S215
ＩＤカード内のパスワードを読み出す
S217
一致した？
No
Yes
S219
一般研究医？
Yes
No
S221
リストアップされた一般研究医？
No
Yes
S223
特定研究医？
No
Yes
S225
操作拒否
S227
操作許可
エンド

[Drawing 22]


参照処理
S231
ＩＣカードから健康情報ＵＲＬ及び関連情報を読み出す
S233
検索メニュー表示
S235
検索条件入力取得
S237
健康情報ＵＲＬ及び関連情報並びに検索条件を含む検索要求を検索サーバに送信
S239
データ量関連情報受信・概算時間表示
S240
検索サーバから医療情報を受信
S241
JPEG2000の解凍処理及び受信医療情報表示
S243
報酬情報受信・表示
エンド

[Drawing 23]


スタート
検索要求を受信
S251
認証処理
S253
成功？
S255
No
Yes
検索先健康情報ＵＲＬを決定
S257
検索先健康情報ＵＲＬのＤＢセンタ・サーバに検索条件を送信
S259
医療情報及び報酬情報受信
S261
データ量関連情報送信
S263
医療情報及び報酬情報送信
S265
エンド